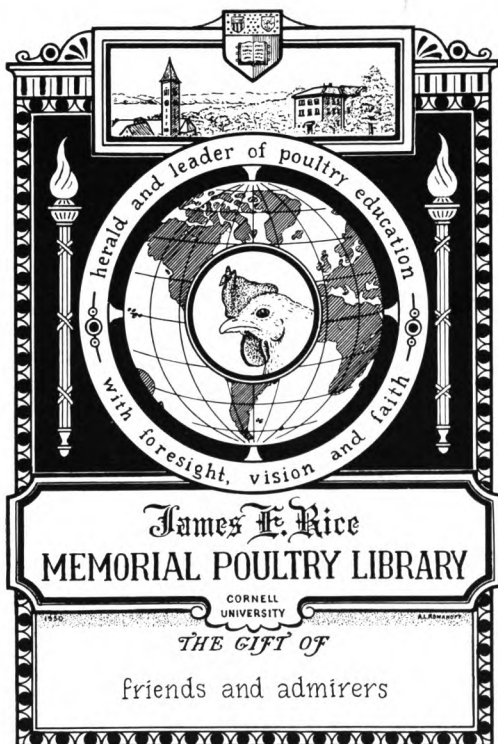


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*All  
About  
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# ALL ABOUT LEGHORNS

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Edited by  
H. V. TORMOHLEN  
Portland, Ind.

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# What Breed of Chickens Is Best for the Farm?

By GEORGE RUSSELL, Chilhowee, Mo.

**T**O COME right out and say that any certain breed is the best chicken for the farm would hardly be the thing to do, for we can look around and see farm people making money with most all of the Standard breeds. But, on the other hand, is it fair to the fellow who is trying to make a start with poultry—and perhaps putting in the savings of years and who has the upkeep of his family looking him in the face—to let him take chances where there are ninety-nine to one against him?

There is no getting around facts, whether we like them or not. We may have a Hereford cow that has proven an excellent milker and has been a money maker. Her records may show just what she is and her owner may think he has made a discovery, that he has a strain of Herefords that will make a profitable dairy herd, but where would you find a man who has had years of experience in the dairy business who would advise you to buy whitefaced cows to go into the dairy business with? This man knows from many years of milking and caring for cows that it takes a mighty good cow to make a profit, that a cow must be bred for rich milk in large quantities for generations to be profitable.

Just the same with the farm poultry. Where we find one flock of the heavy breeds that have been bred for meat production making a profit, we find many of this same kind that do not make a profit. On the other hand, we have the breeds of poultry that have been bred for many years for a greater production of eggs. These can be depended upon to produce eggs in a paying quantity if rightly taken care of. You may say that the young stock does not bring so much on the market as the larger breeds. Some years ago the Missouri Experiment Station gave out the figures of raising poultry for the market with a cost of twenty-seven to sixty cents per pound. With our market ranging from fifteen to thirty cents per pound there is no way to make a profit by raising poultry meat for market. Most poultrymen would not raise a single chick if it were possible to buy the well-matured pullets. However, this seems impossible, so we must raise enough pullets each year to replenish half our flock. If you are keeping five hundred hens you will have to put in the laying house at least three hundred good pullets each fall. This will give you a surplus of fifty to cull out and take care of the small loss which may occur. To raise three hundred good pullets you will have to hatch about seven or eight hundred chicks.

If you can get your cockerels on the market early, which will give your pullets more room and make the sale of the cockerels pay for the raising of the pullets, you will do mighty well. I have been told by old poultrymen that there is just one sure thing in the poultry game and that is a good, well-matured bunch of bred-to-lay Leghorn pullets. Everything else may fail, but a good bunch of Leghorn pullets will lay and pay a profit. It is very necessary to hatch these pullets early enough so they will mature in the fall and begin laying before cold weather. If this can be accomplished and you give your birds reasonable care you are almost sure to have a good supply of winter eggs when egg prices are high.

There is quite a selection of these egg-laying birds, although they are mostly Leghorns. The Leghorns give a variety in the Brown, White, Buff and Black. The Brown Leghorns perhaps have the lead in our section of Missouri. The Missouri flock contest conducted last year by the Poultry Department of the Missouri Agricultural College on a number of farms was won by the White Leghorns with an average egg production of about

136 eggs per hen. The Brown Leghorns came next with an average of about 129 eggs, with twice as many birds in the contest. These contests were carried on right on the farms under farm conditions. This does not sound like a very large egg yield if compared with the egg-laying contests where just a few birds are kept under ideal conditions, but compared with the average of about sixty-five eggs per year for the average hen it means a great deal. It takes just about five dozen eggs per year at the average price of feed and the average price of eggs for a hen to pay her board, so if your hens are not doing better than sixty-five, they are not making you very much money. There are too many farm folks that go on the theory that the hens on the farm do not eat much and what little they get from them is clear profit. Poultry should not be kept in this way, for with proper care and the right kind of stock and feed they can be made to pay a very neat profit each year.

We have found after years of experience that the hens that weigh from three to four pounds are the best layers. We have Brown Leghorns that weigh as high as six pounds, but as a rule they are not the profitable hens to keep. They seem to get lazy much quicker than the smaller hen. The standard weight of eggs is set at twenty-six ounces per dozen and we have never had any trouble in producing eggs of this weight. It would seem foolish to produce a thirty-ounce egg to sell for the same as a twenty-six ounce egg. It would be just like selling your wheat and figuring seventy pounds to the bushel instead of the standard sixty pounds.

We have had pullets begin laying when from four to six months old and they made egg records of about two hundred eggs each by the time they were eighteen months old. It is possible to produce two generations in one year.

Another thing in favor of the Brown Leghorns is that they seldom sit or go broody during the first year. Anyone who has not had experience with chickens in large numbers doesn't know what it means to have, say, twenty per cent of the hens go broody. It isn't so much the loss of eggs, which we will admit is a great deal, but the trouble of taking care of these broody hens. You may suggest building a broody hen coop. Well, let's see, twenty per cent of five hundred hens would be one hundred hens broody at one time. With some of the larger breeds it takes several days to get them over this broody notion and I have seen in small flocks half the flock broody, which would be very serious for a fellow supplying a regular trade with eggs.

We are shipping fresh eggs to the city by parcel post and receiving just about twice what the eggs are bringing on our market. We can't supply the demand and have tried to get other folks interested but they say they can't get the eggs. True, the temperature has been down to twelve degrees below zero, but the hens are keeping right on. I believe they are standing the cold weather better keeping busy than the hens that are loafing on the job and waiting for spring and the low price of eggs before laying. My advice in selecting a breed is to get your stock or eggs for hatching from the breeder or farmer that sells his eggs in thirty-dozen cases the year around.

—X—

## Leghorns Profit Thirty-four Percent Ahead of Reds

Here are the figures taken from actual records showing a profit of 34 per cent more on Leghorns than on Rhode Island Reds. The figures show the Leghorns sold at a 25 per cent discount, just as they are on the market today, and yet the Leghorns are by far the greater money makers. Leg-

horn breeders should consider these figures carefully before becoming discouraged because of having to accept less on the market than for the heavier fowls.

**REDS**

1,000 R. I. Red Chicks purchased May 24, at \$15.00 per 100 .....	\$150.00	
Feed for 500 Cockerels 7 weeks, 3 pounds per bird, 1,500 lbs. at 2 cents per pound.....	30.00	
500 Cockerels sold at 7 weeks old, weight 1 pound each, 500 lbs. at 28 cents per pound.....		\$140.00
Feed for 500 Pullets for 22 weeks, 23.7 lbs. per bird, 11,850 lbs. at 2 cents per pound.....	237.00	
Profit per hen from Nov. 1 to Nov. 1, \$1.20 each.....		600.00
500 Hens sold Nov. 1 after laying year, 6¼ lbs. per bird, 325 lbs. at 16 cents per pound.....		520.00
	<hr/>	<hr/>
	\$417.00	\$1,260.00
		417.00
		<hr/>
<b>NET PROFIT .....</b>		<b>\$843.00</b>

**LEGHORNS**

1,000 Leghorn Chicks purchased May 31, at \$12.00 per 100 .....	\$120.00	
Feed for 500 Cockerels for 8 weeks, 3.5 lbs. per bird, 1,750 lbs. at 2 cents per pound.....	35.00	
500 Cockerels sold at 8 weeks old, weight 1 pound each, 500 lbs. at 20 cents per pound.....		\$ 100.00
Feed for 500 Pullets for 21 weeks, 19.4 lbs. per bird, 9,700 lbs. at 2 cents per pound.....	194.00	
Profit per hen Nov. 1 to Nov. 1, \$2.26 each.....		1,130.00
500 Hens sold Nov. 1 after laying year, 4 lbs. each, 2,000 lbs. at 12 cents per pound.....		240.00
	<hr/>	<hr/>
	\$349.00	\$1,470.00
		349.00
		<hr/>
<b>NET PROFIT .....</b>		<b>\$1,121.00</b>
<b>NET PROFIT REDS .....</b>		<b>843.00</b>
		<hr/>
<b>DIFFERENCE IN FAVOR OF LEGHORNS.....</b>		<b>\$287.00</b>
<b>LEGHORNS LED REDS BY 34%.</b>		

Above figures for amount of feed to seventh and eighth and twenty-first and twenty-second week taken from New Jersey records for pullets only.

Above figures for amount of profit per hen during first laying year taken from Vineland, N. J., records.

Feed prices based on prices at Fairmont, Minn., 1922. Typical American town.

Broiler prices and hen prices actual prices paid at Fairmont, Minn., 1922, by one of largest poultry handling companies in the U. S. with headquarters in New York City.

Baby chick prices those of many hatcheries.

Broiler weights based on New Jersey records for pullets only, while the Vineland, N. J., records show Leghorn broiler weights at eight weeks as 1.35 pounds each, and Red weights as 1.05 pounds each at seven weeks.

We, therefore, take no account of 150 pounds of broilers or a value of \$30.00 which it is perfectly possible to obtain.

Above figures allow nothing for eggs laid in October, while undoubtedly the Leghorns would lay some and the Reds practically none.

Above gives Reds credit for being fully developed and ready to lay by November 1 when 22 weeks old, while we know they would not be for two months at least after that date, and the Leghorns would be well into their laying season.

Above gives no credit to the Leghorns for smaller investment in the way of cooping while it is a fact that three Leghorns will do well where two Reds cannot live, and we do not overlook the fact that a Leghorn must have a six-foot fence while a Red only requires a four-foot fence.

Above figures based on as near perfect care and attention as we at this day and age know how to give poultry, consequently the difference would be very much larger in favor of Leghorns on the ordinary farm where poultry receives very little care and attention, and in fact where the hens have to rough it.

No credit is given in the above to Leghorns for the very much greater fertility of their eggs, which would be an enormous item if one desired to hatch his own chicks rather than buy baby chicks.

No losses by death considered because both breeds would run about the same.

(Leghorns consume 69 pounds of feed per year.)

(Reds consume 73 pounds of feed per year.)

We are indebted to Mr. E. L. Ballou, Fairmont, Minn., for the figures and facts given in the above statements and in commenting upon them he says: "I am not in the hen business for the money there is in it but solely because I love an old hen. It is my recreation. I have been at it since 1898 and have in that length of time bred 18 varieties of fowls. I have now in my yards some Leghorns and some Reds. They are both wonderful breeds. I don't know that I can ever give up either breed but I am trying to determine which is the more profitable for the man who is on the farm and does not make a business of his poultry but DOES want it to pay him an income. With that end in view I have prepared and presented these facts. Now please turn this over to your Red man and have him tear it to pieces for me. It just seems to me there are some facts here that are pretty hard to get around. Understand I have good Reds and good Leghorns and no other breeds, but how can I conscientiously tell my farmer friend that he can make more money with Reds when I have the above figures before me? After all, it is the almighty dollar that we are all after,—the hen we want is the hen that makes the most money and all the figures and tests show the Leghorns lead the entire list of breeds of poultry."

—X—

## Thirty Below Zero and Plenty of Eggs With Leghorns

By MR. W. F. ROLF, Zumbro Falls, Minn.

**W**HEN I first came to my present location I had a good opportunity to keep chickens and so decided to go into the chicken business. From the very outset it was my intention to keep one breed only and that pure, as I was disgusted with the crazy quilt aspect of the mongrel flocks which graced or disgraced 'most every farm-yard. At that time I did not know a Rock from an Orpington or a Leghorn from a Minorca as I had never kept chickens or never been inter-

ested in them before. So my selection of a breed was largely guided by the counsel of my friends whom I had asked for advice. I wanted a fowl that would lay the most eggs so therefore promptly began my inquiries for that kind of a fowl. Almost invariably the answer I received would be: "The Brown Leghorns lay the most eggs." When I would ask where I could get some good Brown Leghorns I was always referred to a certain Mr. C., who always kept the Brown Leghorns and who, they said, was always getting more eggs than anybody else the year round.

When I came to Mr. C.'s place I found all the good things that had been said of him verified. He had a large flock of Brown Leghorns, the sight of which made my heart rejoice. Here was a chicken that appealed to my fancy at once. Their neat, clean appearance, their sleek, glossy plumage, their great activity—a constant singing and cackling—were in marked contrast to what I had seen before on the average farm. I entered into a chicken conversation with him. I learned that he was getting a lot of eggs, especially in winter when others were wishing for eggs, but not getting any; that he was making more money out of his chickens than any other investment on his farm; that he was supplying many local customers with eggs for hatching. I knew enough. I procured some stock and eggs for hatching from him and have been a pronounced Brown Leghorn crank ever since.

Yet, I knew nothing at all about Brown Leghorns at this time except that they are a beautiful fowl and very good layers. I did not know there was a light variety and a dark variety. Neither did the man from whom I purchased my stock, although he had raised Brown Leghorns all his life. Whenever he wanted new blood he would simply order eggs for hatching from some poultry farm. Sometimes he would get the Light, then again the Dark. I did the same thing and was mystified at the great difference and contrast between the fowls I would raise from these eggs. This state of affairs continued until a copy of *The Leghorn World* accidentally came into my hands.

That opened my eyes. I learned that heretofore I had been groping in the dark. Now it dawned upon me that there were two distinct varieties, and I also learned that there was such a thing as a Brown Leghorn Club, which I lost no time in joining, as I was eager to learn all I could about the two varieties. One of the happiest moments of my life was when I received the club's year book and could delve into the mysteries of Brown Leghorns. I decided to start all over again, so I disposed of my entire flock and proceeded to get new blood from the best specialty breeders in the country. I was through with the fifty-seven variety breeders. As I could not imagine anything more beautiful than a Standardbred Dark Brown Leghorn male, I decided to breed the dark variety only, and have been breeding it ever since, and my good friend from whom I had originally procured my Leghorns has been getting his breeding cockerels from me ever since.

We often meet with the argument that the Leghorns, being a closely feathered fowl and imported from Italy, are not so well adapted to our northern climate as the heavier breeds. However that may be, it is my firm conviction that they are the most profitable fowl even in a northern climate. I find that they are very easy to raise if given proper care, and they reach the broiler stage very quickly—quicker, I believe, than the heavier breeds. I have yet to see a Leghorn chick running around half naked as I do see the Plymouth Rocks for instance, chirping pitifully and chilled to the bone in cold and rainy weather. Moreover, the Leghorn cockerels can readily be distinguished from the pullets at a very early age, which cannot be said for the Rhode Island Reds and other heavier breeds and which is a great advantage in marketing early cockerels. Again, the

Leghorn need not be hatched as early as the heavier breeds, but will begin laying earlier in the fall than their heavier cousins. That is a great advantage in our northern climate and means a great saving of fuel for brooding, feed, work and worry. Just the other day a customer of mine told me that his late June-hatched pullets began laying in December and had never stopped yet. Furthermore, the fertility of Leghorn eggs is much greater than of the heavier breeds especially in the early breeding season which again makes a saving of eggs; and less males are required than in the heavier breeds.

When on free range the Leghorn hen requires very little feed and goes right on producing eggs while her heavier sister thinks only of eating, loafing around and putting on fat, and finally stops laying. If confined and fed a fattening ration the Leghorn will put on fat very rapidly and makes a most excellent table fowl. True it is that the market discriminates against the Leghorn hen, but what of it? In two years the Leghorn will have made so much profit for her owner that he can afford to give her away.

But the main argument advanced against the Leghorn hen by the snow diggers of the north is that she will not lay in winter. Our northern winters are very long and oftentimes very severe, but whether the Leghorn hen will lay under these trying conditions depends entirely upon her owner. Let the pullets roost up in the trees till the first good blizzard sets in and their combs get frosted, or, put them in a high, cold, draughty henhouse, with no chance for exercise and without the right kind of food and very likely you will not find any winter eggs.

If you want winter eggs in Minnesota your pullets must be in their winter quarters, or laying house, by the beginning of October. Keep them there throughout the whole winter, except for an occasional outing in fine weather. Feed them heavily so they will get good and fat and at the same time, give them plenty of exercise in a deep litter half a foot deep or even deeper. They should consume at least as much mash as grain feed or even more. Don't forget the green food, meat food, grit, charcoal, oyster shell and water. Warm the water and grain feed, if you can.

A good laying house is absolutely essential to winter egg production in our northern climate. It must be absolutely dry, warm and well ventilated. Don't have the ceiling too high. Never have it more than seven feet from the floor in front and five feet in the rear. Have it well stocked but not over-crowded, giving each pullet about three square feet of floor space. A double board wall with two layers of heavy tar paper in between (no dead air space) is probably the best. No matter how good a poultry house may be in Missouri or Florida, don't experiment with it in Minnesota. It will be a very costly experiment. Get your plans from the Agricultural Extension Division, University Farm, St. Paul, Minn., and build accordingly. If you follow out these suggestions you will be hauling your Leghorn eggs to market in thirty below zero weather, while your heavier breed neighbors will turn green with envy and probably go to the store and buy your Leghorn eggs to do their Christmas baking.



## The Most Popular Fowl and Why

By C. S. PHELPS, R. R. 1, Cortland, N. Y.

**T**HE most popular fowl are the Single Comb White Leghorns. They are one of the largest classes in the showroom. They are found on the commercial egg farms almost exclusively to all other breeds combined. Why their popularity? As a show bird and fancier fowl it is due to their wide awake attractive appearance, beautiful lines, long, graceful curves, low, well spread tails, profusely feathered saddles and tails, and on the males the long curved sickle and heavily furnished tails. Neat, moderately curved, intelligent heads, of refined appearance, bright red combs and wattles, deep, large, expressive red eyes and pure white lobes and plumage make a very striking appearance.

From the breeders' standpoint, there is a great demand for exhibition breeding stock and show birds as well as supplying males to the commercial egg farms with which to improve their stock for egg production. It is well known that the Standard Type Leghorn is responsible for the high average egg production which has caused the great popularity of the Single Comb White Leghorns as the most uniform high producers of large white eggs. They are the greatest layers and greatest profit payers of all domestic fowls, the chief reason being that their body type provides great space for the vital organs. Their alertness, activity and great digestive powers, their low upkeep, high fertility, big hatches, big livability, low mortality, early maturity, long producing period, lessens the expense of reproduction.

The flock often insures greater profit both from a market egg as well as a breeding standpoint.



## Early History of First Leghorns in America

By the late ELIAS GALLUP, Hanford, Calif.

(Written by Elias Gallup the week before his death, March 27, 1917. Mr. Gallup was probably the last of early breeders of Leghorns who could recall the first importations to this country and describe them from the standpoint of a fancier.)

**M**Y FATHER was a mechanic and lived eight miles from Mystic, Conn. In April, 1854, I went to work for a Mr. Fish, of Mystic. When I arrived at the farm the first thing that attracted my attention was the peculiar-looking chickens. They were Leghorns! I was fourteen years old but had never before seen Leghorns, and it was a great treat to me to look at those fowls. They had large combs, were of different colors and beautiful.

From memory and the best information I can obtain, these Leghorns that I saw at the farm of Wm. Fish were raised from eggs obtained from the first importation of Leghorns to Mystic in 1852. They had been brought from Leghorn, Italy, by Captain Gates on the ship "Harriette Hoxie" and left with Mr. Geo. Burrows and Mr. Albert Stark.

I will say that 1852 is the earliest exact date we can rely upon as the year Leghorns first reached our shores, and it may be looked upon as the initial year of the Leghorn breeding in the United States. We have reports of their being introduced into New York in 1835, being imported by Mr. N. P. Ward, of New York City, but little, if anything, was heard of the Leghorns until after the importation to Mystic, Conn., by Captain Gates.

The Leghorns that Captain Gates brought over and those owned by Mr. Fish were of different colors but none of them were what we might call Brown Leghorns. These fowls which Mr. Fish had were raised from eggs obtained from the yards of Mr. Burrows and Mr. Stark. I often visited the yards of Mr. Stark, also, and remember the fowls well. When I returned home in October of 1854 after working for Mr. Fish during the summer, I took some Leghorns with me. Most of them were similar to what we call Dominique or hawk color today. They had very large combs and white ear lobes, yellow legs and beaks. The sickle feathers on the male were white and long, and the tail carried high. These fowls were very nervous and wild and were not favorites with my father until he saw the large white eggs they laid during the cold weather.

I have read in old poultry journals that the first importation of Leghorns that were called Brown Leghorns were bred from the 1852 importation. I knew every man's fowls in Mystic; in fact, I was a young chicken crank and had been from a small boy. When nine years old I bought, with the first money I ever had, a Black Shanghai cockerel. When grown this bird could eat corn from the top of a flour barrel. Chickens were my hobby.

The following year, 1853, Capt. Gates brought from Leghorn, Italy, to Mystic, the second lot of fowls, and they were left with Mr. Russel Brown, a stable keeper. These were Brown Leghorns and were the first Brown Leghorns that we have any authentic account of. They were called Red Leghorns, though, in that locality. It was in 1853 that the first Brown Leghorns were landed in Mystic, bred and disseminated over New England. No earlier date can be found that will do to tie to. It may be true that fowls from Leghorn, Italy, during many years previous had been put in ships for food purposes enroute and the leftovers kept by parties in New York City, but if any feathered fowls from which the modern Brown Leghorn's type and color could have developed saw our shores earlier than 1853, the evidence and dates concerning them are lacking. I have no recollection of seeing any Brown Leghorns the first summer I worked at Mystic. It was in 1854 that they were brought to the yards of Mr. Brown who lived some distance from where I did. His home was on the east side of the Mystic river but his stable was on the west side near where I was and I saw him quite often. Again in 1855 I was at the farm of Mr. Fish during the summer and returned home in September, taking home with me a Brown Leghorn cockerel and some pullets bred from the 1853 importation. They did not have as large combs as the 1852 importation. The breasts of the males were dark salmon color, often with black feathers mixed in. You would often see white sickle feathers and white primaries in the wings. They were good layers and never were broody. I was at the farm of Mr. Fish four summers in all and saw Mr. Brown quite often while there.

In 1858 I came to California. I returned to my old home in 1875 and while there saw Mr. Brown and was told by him that he still owned Brown Leghorns and they had been kept pure without new blood being introduced.

It is told by some that the Brown Leghorn color has been improved since landing on American soil by crossing with the Black Breasted Game. This is a foolish idea. They were handsome then, as they are today.

At the time the Leghorns were brought to Mystic they were an unpromising lot as we remember them, but they had elements of great value. White in the plumage of the Brown Leghorn was a common color and may account for the development of the White variety. It was several years before a fixed breed was established, even with the excellent foundation they had. The foundation was good because the birds had the same gen-

eral characteristics peculiar and valuable to them today and possessed by none of the then existing favorites.

So when the "Brown Italians" were introduced with uniform points of a fancier's fowl, they became at once a great favorite and had deserved success. Persistent, intelligent efforts on the part of Brown Leghorn fanciers of the past has brought up the standard almost to perfection. The fanciers are to be congratulated upon the improvement they have obtained. In the Brown Leghorns we have combined grace, beauty and usefulness to a higher degree than any other breed. They are undoubtedly the most attractive fowls bred, and always appeal to the refined and the lovers of art. Certainly nothing is more handsome on a well-kept green lawn than a flock of these beautiful birds. They are good layers of large white eggs and to the gentleman or lady who intends to keep a few fine, handsome, useful fowls, I cannot recommend the Brown Leghorn too highly. That they have held their own so well is because of their commercial value aside from their value as a fancier's fowl.

**Note by the Editor:** Mr. Gallup is a striking example of the typical early American pioneer and continent maker. As his contribution to the cause of humanity Mr. Gallup presents his entire life in developing better strains and breeds of sheep, hogs, and poultry. He made the first exhibit of Poland China hogs at the California State Fair, and was the first man to register one from California. For many years he was a judge of hogs, sheep and poultry. At the time of his death he was actively engaged in breeding Poland Chinas and Brown Leghorns.

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## The Modern Leghorn—Its Development, Type and Characteristics

By H. V. TORMOHLIN, Editor

**A**S YOU will learn from another article in this book, if you are not already acquainted with the history of the Leghorn breed of fowls, the first Leghorns came from Italy. As a matter of fact all our domestic animals and fowls came from the Eastern Hemisphere.

Nearly all of our breeds of sheep came from England and Scotland as did our Shorthorn and Hereford and other beef breeds of cattle. Our draft horses came from Belgium, France and Germany, our Jerseys from the isle of Jersey, the Holsteins from Denmark. Those familiar with these various breeds of live stock know that these breeds have been so highly developed in Europe that our American breeders, although breeding them here for fifty or more years, have been unable to develop a more perfect type and hence keep importing these various breeds to build up the American flocks and herds.

Although our domestic poultry all traces back to stock imported from Europe our American poultrymen have far surpassed any other set of breeders in any other country on the globe in bringing about perfection of type and color and developing greatest efficiency in egg production. So although our first Leghorns were brought over from Italy the reader should not jump to the conclusion that Italy or any other European country has Leghorns like or equal to our American Leghorns.

Those first Leghorns from Italy could not be said to be as good as our poorest barnyard mongrels of today. They were, however, the best layers that had been found up to that time. There were no Rhode Island Reds, no Wyandottes, or Plymouth Rocks at that time. It is said on good authority that all of these breeds have Leghorn blood in their veins and

this is doubtless true. A number of other newer breeds also owe to the Leghorn blood they have in their veins what egg-laying ability they have.

From those first Brown Leghorns, or Red Italians as they were then called, all our various varieties of Leghorns have been developed. The Browns were first, then came the White, the Buff, Black, and later the addition of the rose comb to practically every variety so that among Leghorns we have a choice of either a single or rose comb and a choice of six colors. There are two varieties of Brown Leghorns, the Light and Dark Brown and then there is the Silver Leghorn.

### **The Ideal or Standard**

The ideal type and color or Standard for each variety is officially determined and published by the American Poultry Association made up of breeders of all breeds of poultry and of breeders from every section of the North American Continent. The American Poultry Association publishes a book called the American Standard of Perfection which was formerly revised every five years but now every eight years. In no other country have official standard-making powers been placed in the hands of one national association representing all the leading breeds. In England the different breeds have clubs which promulgate the ideal or standard for their breed or variety. While in the United States we have a number of very large and active specialty clubs organized for the sole purpose to foster and promote their one variety of fowls, yet these American specialty clubs, after developing their standards, forward them to the American Poultry Association with the recommendation that they be adopted. At times they are accepted as submitted and at other times altered or changed somewhat, but the breeders accept the American Standard of Perfection, when published, as the official guide.

### **Building Leghorns in America**

The early breeders of Leghorns struck out boldly to develop all the egg-laying ability and beauty that this active fowl had. In Italy little attention was given to producing one type or color. American breeders immediately seized upon the opportunity and within a few years produced the various varieties mentioned and brought out a type that was uniform for all the varieties of Leghorns. By careful selection and breeding their wonderful egg-laying ability was improved from year to year until today the average production for our well-bred Leghorns is possibly twice that of the original Leghorns imported from Italy. The short-legged dumpy bird with fan tail to the wind and comb as big as your hand has been improved upon until today we have a Leghorn much larger in body, a third longer, much deeper and wider in the abdomen so that much additional food-consuming capacity has been given and with it the added egg-production. The large comb so easily frozen in the winter has been refined until it is the neat beautiful appendage seen in the ideal pictures in this book. The body has been raised from the ground and put on strong, stalwart legs capable of plenty of scratching and foraging which makes the Leghorn so economical in up-keep and healthy and vigorous in body. Today the American Leghorn leads the world in egg production both in numbers of eggs and the cost of production. She is indeed the marvel of the century in efficiency, surpassing, I dare say, all other breeds of poultry and domestic live stock, wherever found in the world today.

### **Leghorn Type**

As I have intimated in a preceding paragraph, while the body conformation or type, as we call it, in the ideal is the same for all the different varieties of Leghorns, yet the American breeders have worked wonders in the past score or more of years in developing the size, weight and

length of their Leghorns. The old-time Leghorn had a short body, short back and high tail, so high in fact that we called them "squirrel-tailed" and some were so extreme that it could be said of them that they could pick their teeth with their main tail feathers. The Leghorn hen, mate of this old-fashioned male, had one eye completely hidden by her comb, also a short back and high tail and abdomen that almost touched the ground. Today we have a moderately long-bodied fowl, rather deep and with good width from the full, well rounded breast to the extreme rear portion which we have said has given the much added egg-making capacity. The reader can best get an idea of the ideal male and female by referring to the ideal illustrations. It is important, however, that you do not forget that width of back looking down on the fowl from above is very important for a deep body must also be wide in order to have the proper capacity and also to obtain the ideal tail and tail carriage. And the underline of the fowl should conform generally to the top line. The feathers of a Leghorn should be of good width and medium hard in texture as a soft-feathered Leghorn cannot stand the wear and tear incident to an active egg-producing life. The feathers at the side of the tail of the male, called secondary sickles, should be abundant, wide and carry up along the side of the tail. The feathers at the rear of the body and the side of the tail of the female should also be of sufficient length and width to carry up well on the tail. A good covering of feathers over the back just above the organs of reproduction protect them from climatic extremes and give that oval back so much desired. Narrow backs, high tails, pinched tails, shallow breasts, thin bodies or upright bodies should be avoided in all cases.

#### Standard Weights:

Cock .....	5½ lbs.	Hen .....	4 lbs.
Cockerel .....	4½ lbs.	Pullet .....	3½ lbs.

**Head Points:** The head, beak and eyes should be moderate in size while the texture of the face, comb, wattles and ear lobes should be rather smooth or fine as we call it, as coarseness is correlated with inefficient production. The comb of the male should stand erect, while that of the female droops to one side. The comb should be free of "thumb marks," wrinkles or cupped-out places. The number of points on the comb is not so important as the shape, size and general appearance of the comb in the particular fowl. While five points is the ideal, a fowl with four or six or seven points may have a much better comb than one with the exact number of points but possibly ill-shaped, thumb-marked or coarse in texture. The wattles should be medium in size and thin and free of folds or wrinkles. The ear lobes should be oval, smooth and of moderate size. The entire head should rest upon a rather long, gracefully arched neck.

**Legs and Toes:** Moderately long shanks and lower thighs are desired, with good bone but free from coarseness. The toes should be straight and medium length.

**Color:** The color of the beak, legs and toes of all varieties of Leghorns should be yellow, the ear lobes white and the eyes reddish bay; the face, comb and wattles bright red.

#### White Leghorns

The plumage of the White Leghorns should be pure white in all sections.

#### Buff Leghorns

The plumage of Buff Leghorns should be a rich golden yellow in all sections. The color should be the same shade over the entire fowl and more attention should be placed upon this than to the particular shade of color which varies somewhat in different fowls. (All varieties of buff

fowls in the American Standard of Perfection have the same color description.)

### Dark Brown Leghorns

**Male:** The Dark Brown Leghorn male has a rich, brilliant cherry-red neck, back, wing-bows and saddle. Each feather in neck-hackle, back and saddle should have a black or greenish black stripe which should, however, be surrounded at the tip with the outer web of red, as a black tipped hackle or saddle spoils the appearance of the fowl. The wing-bow, as we have said, is a rich brilliant red and should match the hackle and saddle in shade of color. The wing bar is a greenish black, the primaries dull black edged with bay and the secondary wing feathers are dull black with the exception of their upper portion which should be bay in color, giving a beautiful wing bay when the wing is folded. The main tail feathers are a dull black while the sickle and lesser or secondary sickles are greenish black. The breast is also greenish black, the body and fluff dull black. Purple is objectionable in any part of the plumage.

**Female:** The Dark Brown Leghorn female is a dark or mahogany brown with the exception of the neck which should be red with a black stripe extending through the middle of each feather. The web of the feathers on the surface of the back are black, stippled with dark brown, the dark brown predominating. The unexposed portion of the feather is a slate color. A greenish sheen is highly desirable over the surface of the back, wings and tail of the female and shafting is objectionable. The breast is of a slightly lighter shade of color, the web of the feather being red or salmon colored stippled with the brown, but due to the fact that the breast is underneath and away from the direct rays of the light it appears on first glance as being the same shade of color as the back, which, although darker, is lighted up by the direct rays of light from above and the effect therefore is to equalize the effect of the back and breast color. Shafting in the breast feathers is not so objectionable as in the back feathers.

It should be borne in mind that fine stippling of back and wing feathers on the Dark Brown Leghorn female are not desirable as they are in the Light Brown Leghorn female. The even, coarse stippling produces the best stripe on the male offspring.

### Light Brown Leghorns

**Male:** The hackle of the Light Brown Leghorn male is an orange color at the top fading out into a lighter orange toward the shoulders with a dull black stripe running down the middle of each feather. The back is a darker red in color while the saddle is orange in color similar to the neck and fading out toward the sides to a lighter lemon orange, but striping in the saddle feathers is objectionable. The presence among the saddle feathers of a few finely stippled feathers similar to those in the female on the back are desirable as they are an indication of the quality of female back feathers that the male will produce. The wing bow is orange in color but judges do not place importance upon evenness in shade of orange in the various sections as they do in the Dark Brown Leghorn male. The wing bar is greenish black, the primaries dull black, the secondary wing feathers dull black with the exception of the portion forming a wing bay as in the Dark Brown Leghorn male. Shafting is objectionable in the back and saddle feathers as indicating the male will produce this objectionable feather in the female offspring.

The tail, breast and body are similar in color to the Dark Brown Leghorn male.

**Female:** The Light Brown Leghorn female has an orange-red neck with the stripe in each feather. The back, wings and tail covering are

finely and evenly stippled with light brown and great importance is placed upon each feather being free of shafting (meaning the quill of the feather light in color making a light line down the middle of each feather and spoiling the even, soft brown color). Brick or reddish bay tinged feathers in the wing are equally objectionable. On the other hand an edging or a lighter shade on each feather spoils the soft even brown effect and must be equally guarded against. Fineness and evenness of stippling are continually sought after in the Light Brown Leghorn female and the whole effect of the back and wings should be a soft, even shade of light brown, neither gray as the one extreme or dark brown as the other. The breast of the Light Brown female should be an even shade of salmon. The body and fluff and undercolor, slate.

### **Black Leghorns**

The plumage of the Black Leghorn should be greenish black on the surface and dull black in the undercolor of all sections. Purple is objectionable as is also white in the undercolor.

### **Silver Leghorns**

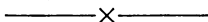
The Silver Leghorn male and female are marked similar to the Light Brown male and female, except that black and white are the base colors while orange and black are the colors in the Light Brown Leghorn.

**Male:** The Silver Leghorn male should have a white hackle striped with dull black at the lower portion while the back and saddle should be white on the surface, slate in undercolor. The wing-bow is silver white, the bar, greenish black and the wing bay white. The saddle is silvery white, the tail and breast greenish black and undercolor slate.

**Female:** The neck of the female is silver white striped with dull black. The ground color of the back and wings is black, finely and evenly stippled with white giving that soft, silvery appearance. Shafting and brick are as objectionable as in the Light Brown Leghorn female. The breast is light salmon in color. Body, fluff and undercolor, slate.

### **The Standard of Perfection**

The descriptions given here are for your guide in breeding only. Every breeder, before ever entering a fowl in a poultry show, should obtain a copy of the American Standard of Perfection and become thoroughly conversant with the shape, type and color of each section of the fowls he breeds and should be equally well versed in the general disqualifications found in the fore part of the Standard. Each year judges are forced to disqualify fowls which the breeder should have known beforehand were ineligible for consideration because of these serious defects. Obtain and know your Standard is the first qualification for a breeder. The revised edition will be mailed postpaid upon receipt of \$2.50 at the office of The Leghorn World, Waverly, Iowa.



## **Washing and Conditioning of White Birds Is of Extreme Importance in the Showroom**

By JAMES E. GREENWALD, Milwaukee, Wis.

**T**HE Standard of Perfection set aside four points for condition in the scale of points, which must be applied by the judge, or his decision is faulty. The interpretation of condition, as applied to poultry, is nothing more nor less than health of a specimen, cleanness of plumage, shanks, etc. There is nothing more important than a well conditioned bird, and in no place does this apply more forcibly than in the best and larger shows where competition is very keen with the best breeders exhibiting the very cream of the season's breeding, and is the

deciding point by the judge in many of his close decisions. It therefore behooves that we show our birds in the pink of condition if we expect to win.

For the benefit of those who may be seeking information in this particular direction, I will endeavor to show just how superior S. C. White Leghorns are washed and conditioned before entering the showroom. We shall, however, assume that the birds intended for show are otherwise good specimens and all that is required to put them in show condition is washing and training.

### **First Washing**

About two weeks before the opening of the show, we select our most likely winners and place them in Keipper all wire training coops for their first wash. Three tubs are used in this operation. The water in which the washing is done should be as warm as one can comfortably stand. Rinse water in the second and third tubs should be a little cooler and contain a little bluing. Great care should be exercised, however, not to get the water too blue, as if a bird gets too much bluing you will find it very hard to remove and will not evaporate for some time. It is also very important to thoroughly rinse, and see to it that there is not a particle of soap left in the plumage or the feathers will dry curly.

We start out by holding the bird in one hand and soaking and lathering with the other, using lux and ivory soap for this purpose. After the bird is well lathered, we rub and squeeze the feathers of back, tail and wings with great care, so that the stiff feathers are not injured. Breast, neck and fluff can be manipulated promiscuously as the feathers in these sections are soft and pliable. A small stiff brush should be used to scrub the shanks and head.

After the bird has been washed it is rolled up in a large Turkish towel and left in that position until we have thoroughly manicured the shanks, using a tooth pick in removing the dirt from under the scales. The bird is then placed in the drying room in Keipper all wire coops on clean shavings with a temperature of 90 degrees. With this degree of heat the bird should dry in five or six hours, after which the temperature is gradually reduced.

### **Second Wash**

As a rule we select and wash from five to ten birds more than we intend to show. This gives us an opportunity to discard the birds that did not improve with the first wash, and those that do not improve with the second or final wash are discarded down to the number we intend to show.

About three days before the show, we give them another thorough washing, using the same methods as we did in the first wash, with the exception of scrubbing and manicuring the shanks. We find after this preparation the birds are in the very pink of condition and ready for the showroom. There is, however, one more important matter in this connection, and that is to place the birds in the judges' hands unsoiled. If the coops in which you ship to the show are thoroughly cleaned and free from dust and supplied with a liberal amount of clean shavings, you have done everything possible to avoid dirty plumage.

### **Training**

Proper training and posing is about as important as cleanliness. A bird may be ever so well washed, but if it is not properly trained, shies and throws itself all out of shape when the judge approaches the coop, you have not a well conditioned specimen and your chances of winning are more or less hampered. A bird will become docile to a certain extent with the wash, but not thoroughly so. We find that a well trained bird

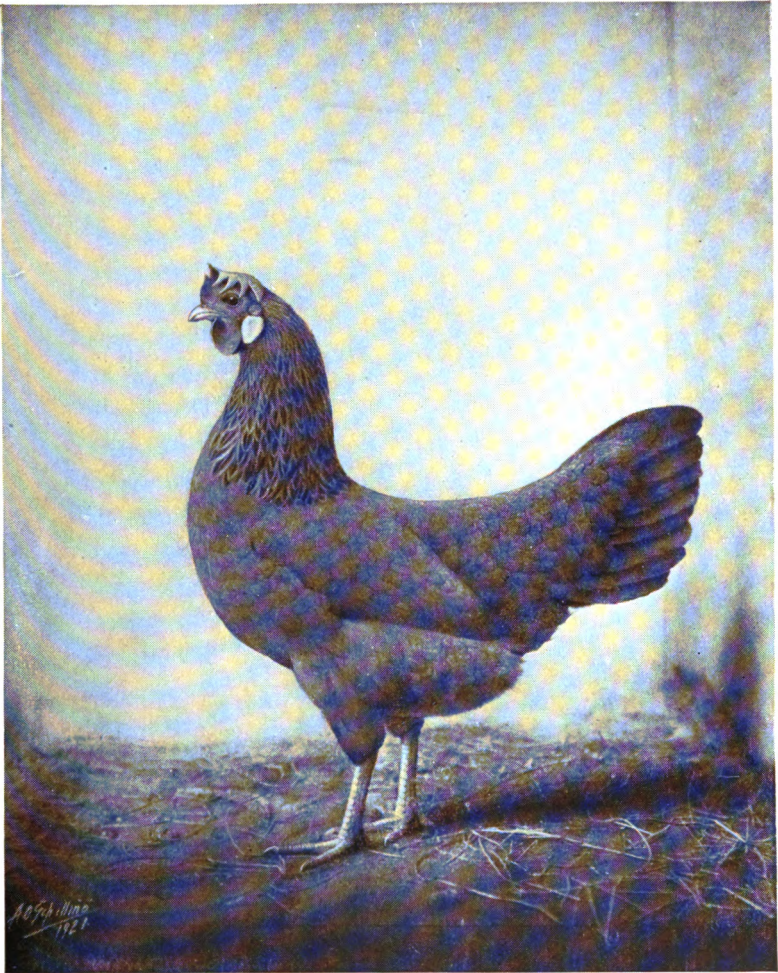






**IDEAL SINGLE COMB LIGHT BROWN LEGHORN MALE**  
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(For description see page 14.)



**IDEAL SINGLE COMB LIGHT BROWN LEGHORN FEMALE**  
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(For description see page 14.)



cannot be trained in the showroom, but instead is required to learn this lesson at home. We learned early in the game that training is of vital importance, and therefore erected a house, 10x25, serving as a training and drying house with a pigeon loft overhead. There are 30 compartments, three tiers high of the famous Keipper cooping. This make of cooping we found to excel anything of its kind placed upon the market to date. Birds can be viewed from all angles and in plain sight at all times, thereby getting your birds accustomed to the surroundings and they soon learn to pose for you at will, so that when they are finally placed in the same kind of cooping in the showroom they will not have to be re-trained, but will pose for the judge without fear.



## How to Properly Rear White Leghorn Chicks

By MRS. HENRY FARNSWORTH, Blairstown, Mo.

**F**OR many years and on many of the poultry farms of this country, the study has been made of properly rearing White Leghorn chicks. For in the last few years various new devices to aid in the raising of chicks have been put upon the market, and these same labor saving devices, while they have proved the salvation of the poultry industry, have been the cause of many losses as well. These losses were caused in some cases by the poultryman not understanding how to operate brooder stoves, and in some cases the brooders were worthless in the first place.

As to rearing chicks, Leghorns and all other breeds included, it depends a great deal on the parent stock, the care and feeding they have had, then on the care of the hatching eggs, the proper incubation of these priceless eggs, and lastly on the care given the chicks before they are taken to the brooder house. But taking it for granted that the chicks have been properly hatched and cared for, then the rearing of the "little fluffes" is the next important step.

### Brooder Stove Most Important

The brooder stove is the most important of the brooding problem. Without a good stove that can provide the proper temperature for the chicks one is almost sure of failure at the start. When chicks are taken from an incubator of over 100 degrees temperature, it is very important that the temperature under the brooder should be at least 95 to 100 degrees and should be kept about that temperature for the first week. Now please realize that it takes a good stove to hold this heat constantly, especially in zero weather, and I do not advocate getting a stove that one has to visit in the middle of the night to rebuild the fire or to see that the chicks are not chilling. A stove that you can depend on to hold fire for at least twenty-four hours, one that requires filling only once a day, is the means of saving the poultry raiser many anxious moments concerning his chicks. Also in purchasing a brooding device that is guaranteed to care for one thousand chicks, it is safer to plan on about half that number, for as they grow larger there are too many around the brooder and they do not do so well. Also do not get a brooder too large in size for the room or vice versa and expect satisfactory results.

### Correct Temperature

After the first week the temperature should be kept about 90 to 95 degrees and may be decreased about five degrees thereafter until the chicks are able to do without heat entirely. Now one must watch the

actions of the chicks for no rule will hold true with all bunched. If chicks persist in getting under the canopy close up to the stove, then it is not warm enough for them. If they show a tendency to want to get away from the heat then less fire is needed. When the temperature is satisfactory they will be found just at the outer edge of the canopy. If the heat should at any time decrease the chicks then have room to move closer to the stove and still be comfortable without tramping the weaker ones. In my own experience in rearing White Leghorn chicks, I have found that heat is invariably what a chick most needs to develop and make proper growth. Of course, feeding is very important but I shall deal more with the surrounding conditions under which they should be raised, because there are so many interesting articles on feeding, and so many good feeds on the market and usually full directions as to how to feed them.

### **Starting Chicks Properly**

I like alfalfa litter for covering the brooder floor as it makes ideal scratching for the chicks, but fine cut straw (be sure it is free from grain) clover chaff or bran is good. Always make sure that the litter is not moldy, for there are many little seeds in clover and alfalfa and of course if in the very least moldy it will be sure to mean many losses.

When placing the chicks around the brooder, take a roll of one inch mesh poultry netting and place around the stove, two or three feet from the edge of the canopy. This prevents wandering away from the heat and becoming chilled. In providing water or sour milk be sure that the jars are such that the chicks cannot get into them and become wet. Keep the waterers scrupulously clean and place them on a platform so that the litter cannot be scratched into them. A board an inch or two off the floor is very handy as it can be raised as the chicks get older.

Get the chicks out of doors when they are about a week old even though the weather is cold; a few minutes each day will prove a great benefit to them, if they are allowed to run back to the heat when they desire. However, if the weather conditions are too severe, green food should be provided and a few spadefuls of earth should be carried into the brooder house, for there is something in this fresh earth that keeps chicks healthy and happy, and they certainly get a lot of enjoyment out of scratching in Mother Earth.

The yards around the brooder house should be plowed and sowed in some quick growing crop, as oats or rape. Shade should be provided if the sun is hot and there is no natural shade. Try a few rows of corn, with oats or rape between the rows and then notice when the chicks are released of a morning if they do not make for that corn. Such a retreat will prove to be much more attractive to the growing stock during the warm days, and the tender green food is much more attractive than the bluegrass that is dried and withered.

### **Keep Them Growing**

After the chicks are on the roost and able to care for themselves to a great extent, we have found that it saves a great deal of time in caring for our "Premier White Leghorns" to keep the grain mixture of corn and wheat in a hopper where they have access to it at all times. The dry mash is also kept before them.

The water fountains should never be allowed to become dry, for the welfare of the chicks depends on pure cold water. A barrel covered and shaded holds enough for two or three days for quite a number of birds. The water can be allowed to drip constantly into a trough.

The main essentials for growing and developing White Leghorns properly is to feed plenty of grain, and dry mash, provide water and shade,

plenty of ventilation in their roosting quarters, and plenty of roost poles for them. Avoid crowding. Clean and spray the house at regular intervals.

Success in rearing chicks consists in knowing what they desire and then supplying that condition. Keep them happy, contented and growing. Like the flock and take a real interest in providing the things essential to their growth and development at the right time.



## Ten Reasons Why the White Leghorns Are Farm Money Makers

By H. E. WILLIAMSON, Dubuque, Iowa

**FIRST.** As the Leghorns are the best "rustlers" they naturally are very active and healthy.

**SECOND.** Leghorns mature quicker than the larger varieties. This saves time, feed and labor.

**THIRD.** Leghorns will start laying younger and continue laying longer than the larger varieties.

**FOURTH.** Fewer males are needed with Leghorns than with larger varieties.

**FIFTH.** As the Leghorns are very active they produce a very high percentage of fertile eggs. Therefore you need not set as many eggs to get the desired number of chicks.

**SIXTH.** Leghorns will stand confinement better than the larger varieties and require less space. You save house equipment and expense.

**SEVENTH.** The government experimental stations report more Leghorns in egg-laying contests than all other varieties combined.

**EIGHTH.** Leghorns do not consume as much food as the larger varieties. This fact greatly helps your bank account. Only 20% of Leghorn hens go broody each year. Compare this record with the large varieties, and you will be convinced the Leghorns are layers and not "shirkers eating their heads off."

**NINTH.** Their beautiful white plumage and red combs and wattles present a striking handsome and clean cut appearance which appeals to all.

**TENTH.** Last but not least. "The hen that lays is the hen that pays," and the Single Comb White Leghorns are the best layers. Note that 80% of the poultry farms that make a business of commercial eggs and nothing else keep S. C. White Leghorns exclusively. The Single Comb White Leghorns are the acknowledged most popular variety of fowls. This is a great advantage in the sale of breeding stock, hatching eggs and baby chicks. A flock of these handsome fowls soon convinces the most skeptical dealer or breeder of their ability to make the poultry business pay and **PAY BIG.**



## Some Points to Consider in Mating S. C. Dark Brown Leghorns

By N. B. SPEARMAN, Ft. Worth, Texas

**F**OR over eighteen years I have carefully bred Brown Leghorns, during which time I've bred for quality, have given my time to this business and made it successful, improving my birds every year by being very careful in mating and selecting. I'll not dwell on color of hackle and saddle so much, but rather take up a few points where so many breeders seem to fail. The first point to consider is vitality. You should by all means have strong, healthy birds to breed from and never breed from any other. Next is good breeding behind them. Never use a bird, regardless of how good the type and color, if it fails to be strong and full of pep.

Many birds show thumb mark in comb. To avoid this defect, select small or medium size comb. The comb should be very scant in front; if you have too much comb in front you are almost sure to breed combs with thumb marks. Let the females have small upright combs free from folds in front. Another fault in some lines of Browns is the male's comb fails to sit up behind as it should; it follows the shape of the neck too much. Select combs as fine in texture and even as possible.

Type comes before color, for shape makes breed and color the variety of the breed. Without type you really have no Leghorns for type makes the breed and color the different varieties of Leghorns. How many Leghorn men have you seen at the shows when a competitor would tell him to look one of his males over, the very first thing he would do would be to take the male out of the coop (before looking for type) and begin to dig right down in the hackle and saddle feathers and if the bird was good in that respect he would pronounce him a dandy? So remember, the best all around bird is what counts, not just extra good in one or two sections, but a good all around bird with no serious faults.

Now about back shape and tail carriage, this is one fault you will find in so many flocks. I consider this very important to give finish to a bird; no need to try to breed tails too low, for there is a limit to that. If you breed tails too low, you will have pinched tails and not that well spread tail so much desired. The tail should be carried well back and should be full and long as well as well spread. To get the desired back shape on males with plenty of saddle feathers to round up on tail, select females with plenty of "cushion" on backs, plenty of long feathers that should be wide. You can never put the back shape on males with a female that has few narrow feathers on her back at base of tail, but you need a "cushion" there, plenty of long feathers and wide. I certainly like a male with well furnished tail, plenty of tail coverts. I do not like those little short, pinched tails.

I like a bird well up off the ground, not a crane, but certainly not a duckleg. Don't overlook a full breast and a well balanced bird, shanks under the bird at proper place, not too far to the front or rear. This you will find will help very much to put that desired finish to a good bird.

As to undercolor, I find many who will breed from a bird if he has good surface color regardless of undercolor. This is a sad mistake. If you are line breeding, the defects that you breed in your line will reproduce in the young birds just as strong as will the good points, and will be hard to get rid of. The undercolor should be dark to the skin, and while it is hard to get the desired surface color and dark undercolor on same



bird, you can by careful selecting and careful mating breed your birds so they will reproduce a greater percentage of quality birds. Select the best all around male you have, and note very carefully in what sections he is weak, mate to him females as good all around birds as possible but strong in the sections where the male is weak. None are perfect, but balance up the mating as best you can. If your line of birds is weak in back, shape or undercolor, you should have both the males and females as strong in these sections as possible in order to overcome it.

The dark females are a dark or mahogany brown—back, wings and breast about the same color. While some like the females very finely stippled you will find the best breeders not so finely stippled. The neck feathers on females should be rich red like the males, with black stripe showing green sheen in center of each feather. The stripe should not run out at end of feather, but have the red edging run round end of feather, undercolor dark to skin. The back should have a green sheen to it. This will help put the green sheen in hackle and saddle of the males. Purple is a defect and should be avoided as much as possible.

In all sections where your male is weak, select females strong in these sections. This of course applies to type as well as color. If male is too strong in hackle, showing smut or black edging, have females not so strong. There is a world of difference in a brilliant red and the dark red. Brilliant red in hackle and saddle does not mean dark red showing black edging. The stripe should be snappy and clean cut.

The first point to consider is vitality, then type and then color. If you want to breed quality birds, never mate any more females to a male than the ones that mate extra good to him. If you have only two females that will mate well to your best male, do not use any more with him. Never put in eight or a dozen more females "just to make out the number." The male is half the flock. It is better if you are going to pay, say, \$200.00 for four females and a male, to spend \$100.00 of that amount for the male and \$25.00 each for the females than it is to pay \$40.00 each for all five birds.

Just a word in regard to our club. If you are not a member, send in your application at once. Let us have the best club in the U. S. for the Brown Leghorns are certainly the best. Quality Brown Leghorns bring a good price and the only trouble I have ever had is raising enough to fill the demand. This I have never done—could sell twice as many each season.



## Pointers on Mating Dark Brown Leghorns

By EARL YOUNG, Falfurrias, Texas

**A** DARK Brown Leghorn, to measure up to the Standard of Perfection, would be ideal and such a bird has not yet been produced. All breeders must strive toward perfection in their fowls and to do this it is absolutely necessary to be thoroughly stocked with knowledge of the ideal bird's coloring, type and carriage. In fact, have photographed in your mind the picture of a perfect bird and be able to understand the breeding qualities of both male and female in this mating.

The female in this mating should conform to our ideal shape and have neat, intelligent head; open eyes; strong, well-curved beak; medium long, us cover type. Head characteristics: Medium lopped, five-point comb; proper color in all sections as near as we can select; but, before color, let well-proportioned neck, well arched. Other characteristics: A full, round

breast, rounding into an underline carried well back and characteristic of the female. A rather long, concave back, rounding into a nice curve upward to tail. The tail should be of good length and well spread. An abundance of covering at base of tail on sides and back is desirable in completing our ideal female. Viewed from the side she is a bird of balanced curves.

The color of the female should be dark brown or mahogany brown over all sections of back and wings. Hackle stripe should be a distinct and lustrous greenish black, with red or reddish bay edge—a laced feather—with red edge extending well around point of feather. Back and wings should have a medium fine stippling, not too coarse. The wing primaries should be edged a bit with brown and the secondaries should have sufficient even stippling the same as the back to blend with these sections when the wings are folded. Two top main tail feathers are edged with brown stippling. The web of the feather in all sections is black with green sheen. Do not forget to select birds with this sheen. By no means use the slaty black ones. The breast should be a reddish brown and free from shafting. Shafting should never show in any section. The fluff should be tinged with brown and the undercolor is a dark slate in all sections. Good undercolor builds good surface in the offspring.

The male should be a male all over, as he is half the mating and fixes characteristics in this offspring that correct color and type. Therefore, great care should be used in selecting him. He should have a strong masculine head, good beak, eyes, wattles and ear lobes, and an evenly serrated five-point comb. Watch your male closely for color in all sections as there is only one male to several females. Hackle should have a good red marking as black points will cause capes and mottled necks. He should be of medium or medium large size, possessing type and characteristics of his sex. Use a male of undisputable dark blood lines. Do not use a too flashy colored male and expect good surface color in the offspring. Your male intensifies color. He should be of a medium dark red, not a smutty or extreme dark with the absence of the green sheen, but a rich medium dark red with a strong green sheen, and of same tone of color over hackle, wing bows, back and saddle. The stripe should be good in all sections. See that he makes up for deficiencies in coloring in sections where your females are weak. Remember the tendency is for color to weaken, as our original Browns were much lighter in color. Use birds that do not fade.

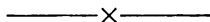
Color of eyes, legs and ear lobes are considered just as important in selecting for this mating and much easier to fix in your ideal bird, than type, proper stippling, hackle, etc. It pays to pay attention to every section. Don't mate birds with disqualifications or serious defects. It is better to have two pens of good ones than ten pens of mediocre birds. Results are more certain and success comes more quickly.

Vitality is a prerequisite in all breeds of fowls, and the first thing to consider. It is the foundation upon which to build a flock of profitable fowls. A bird may have splendid color, wonderful type, but without vitality the color will soon fade and the type vanish. Have them full of pep and vigor, ready for a scrap, with good bodies, legs well apart, upright carriage and alert, open, bright eyes. These are a few points that denote vitality.

Walter Hogan's skull test is excellent and should be used. The further the base of the skull protrudes back of the sides of the skull the better is the prepotency. Never use a bird where the base of the skull does not protrude. This applies to both sexes.

Keep in mind that like characteristics intensify and opposite characteristics draw apart, the stronger predominating. When these stronger

characteristics are defective then we can only hope to eliminate them by proper selection over a period of years. All matings are problematical, due in a large measure to a lack of knowledge of the ancestry of each bird and thus not knowing which characteristics are dominant and which are recessive. This is why a breeder who line breeds can produce better birds. So it behooves a beginner to get the best stock obtainable if he wishes to succeed. Time is too fleeting to let a few dollars take the place of years of breeding and hard labor.



## Mating Light Brown Leghorns for Best Results

By RUSSELL R. STAUFFER, Wooster, Ohio

**T**O BECOME an expert in mating Light Brown Leghorns requires experience, yet a beginner can make progress almost from the very first if he has a liking for the variety and is disposed to carefully observe details and watch results. Of first importance is the foundation stock, which should be obtained from a reliable source, as it is clearly a waste of time to work with inferior birds. A good plan is to keep well in mind the ideal bird when making selection for mating. Observe carefully the defects of each individual and try to off-set as many of them as possible by putting them with mates that are strong in these particular points.

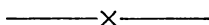
The modern exhibition Light Brown female has usually fine markings, and to hold this color in the flock requires careful mating.

Now that the Light male is being shown as well as the female, it is necessary that we pay more attention to type than formerly. A neat, thin comb and low, well spread tail is important in an exhibition male, and there is no reason why the Light Brown male should not be equal to the Dark in these particular points as well as type in general. If we breed our birds with good type, Standard size, and with plenty of vigor, the laying qualities of the flock are largely taken care of.

In selecting the male bird to head a pen I try to get as many good points as possible, as I consider him more than one-half of the entire mating. I depened largely upon the male to take care of the finer points in type, such as shape and carriage of tail and head points. As to color, there should be a blending of the different sections, suggestive of softness and evenness, for these are the qualities we desire in the pullets, and to get them we must use males having indications of these qualities. Back color should be red, fading very gradually into an orange on the saddle. The more nearly alike these two sections are, the better, as I believe that a male with a dark back with the saddle fading out too abruptly is less likely to produce even-colored pullets than one on which the fading is gradual. These sections should be as free as possible from shafting, and if the bird is a cockerel there should some finely stippled feathers mixed with the regular saddle feathers. Very few cock birds retain these stippled feathers after molting. The hackle of the male must have good striping if we expect to get well striped necks in the pullets, but I find that my best breeders have striping of medium strength. It seems that an intensely strong stripe means too much dark in some other section of the bird. I like a green wing bar, and a wing bow of light red with some stippling and green tipped feathers mixed in. My idea is that a broken colored wing bow indicates a tendency to produce pullets free from brick.

A good female must first have a finely stippled soft shade of brown on

back and wings, with freedom from shafting and brick next in importance. Breast and hackle, while not as important as back and wings, should not be overlooked, as a clear salmon breast and well striped neck add much to the appearance of a bird. I do not object to mating a hen that is somewhat darker than the ideal shade, providing the shade is soft and even with fine stippling. Often good results can be obtained from birds of this sort by mating them with a male of a lighter shade. It is necessary, of course, that the male be from a hen of soft, clean color, otherwise the offspring will be of a coarse, uneven shade. Care must be taken that both male and female are not on the too dark or too light order, or we will get pullets too dark in the one case, or of a washed out gray in the other. I believe that a light colored hen and a dark shade male can also be mated together successfully if we use the same care as in the opposite case. Oftentimes a hen with a nice medium shade will not produce fine pullets of her own shade, but will do very well if mated to throw birds of either a darker or lighter shade. The exact shades in a flock may vary and still not conflict with the Standard, but in all cases it must be a fine, soft brown or we will get away from the Standard.



## Buff Leghorns and Why I Breed Them

By D. E. ROBERTS, Fort Atkinson, Wis.

**I**N THE first place I make the assertion that the Leghorn family is the best egg-producing breed of chickens in existence. There are other good layers; no one breed has a monopoly. Yet it is universally conceded that high egg production is oftener found in fowls of smaller size and of active dispositions, and that heavy production requires less feed in the smaller fowl than in the larger one, as it requires less feed to maintain the body and leaves more for production.

But of course the smaller fowl must be large enough to lay a standard marketable egg, and that is where the Leghorns fill the bill. I had an order this season for a large number of Buff Leghorn hatching eggs that must weigh 28 ounces to the dozen and I was able to fill the order nicely.

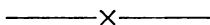
I am very often asked the question, "Why do you specialize in Buff Leghorns?" mostly by my most intimate friends and acquaintances who know that during the past thirty years I have bred and exhibited nearly every variety of Standard fowl. Hence my choice has been because of actual comparison of this variety with all others and not a mere "happencence."

The constitution and activity of Buff Leghorns is such that they are profitable on the egg farm up to three producing seasons, saving supplying an entirely new lot of pullets each season. They lay large white eggs uniform in size. I have been shipping eggs in case lots to New York markets and have been receiving top market prices.

The past season I shipped some surplus Buff Leghorn cockerels to the Chicago market in August and September and although Leghorns were quoted at a discount, in each instance I received the top market prices.

Of course the color of Leghorn you choose to breed is somewhat a matter of personal fancy, but in my opinion, no other color is as beautiful on the range or in the breeding yards as an even lot of golden buff hens and cocks, nor does the color soil badly under confinement. It should not be necessary to describe here the type and correct color of the Buff Leghorn, as old and young breeders can and should have access to the American Standard of Perfection, and you will read many articles giving rules and theories for acquiring perfection in both type and color. Yet it might

not be out of place here to give a few "don'ts" that I have learned from actual experience. Never keep a logy or puny-looking female in your egg flock or breeding pen. A Leghorn cock over six pounds loses his type and carriage and his cockerels will almost invariably lack type and carriage. Never use an oversize or an undersize male in your breeding pens. Do not use as a breeder a hen under  $3\frac{1}{2}$  or over  $4\frac{1}{2}$  pounds. Do not use as a breeder a male or female with white or gray in wings or tail feathers, and above all, avoid male and female with high tail forming a noticeable angle at junction of back and tail. Do not breed from a male showing dark cinnamon tail coverts or dark bar across the wing; a perfectly even shade of golden buff throughout is desired.



## Why Breed Beautiful Buffs?

By MRS. CHARLES R. HUME, Anadarko, Okla.

**M**Y REASONS for continuing to breed these birds are in part these: 1st. Their beauty of form and color, for they are the aristocrats of poultrydom; they do not only look like real gold, but are golden birds, physically and financially. 2nd. They are prolific, producing eggs the entire year, "always on the job," and their eggs are remarkably fertile, so they reproduce their own to advantage.

3rd. The hens lay eggs weighing from 24 to 30 ounces to the dozen, beautiful chalky white ones.

4th. Freedom from disease. They are not as prone to contract contagious diseases as larger breeds, and do not succumb as easily if one gets a little out of condition.

5th. Their hardiness and activity. They are always rustling for food and are happy, contented birds, in spite of their natural nervous disposition—which spurs them to exercise, and tends to healthiness.

6th. They stand confinement excellently, are adaptable to small quarters, hence are the popular birds for the "back-lotter," and for limited quarters, the best breed for small families on small lots.

7th. Economy of feed, producing the maximum of eggs on the minimum of feed; hence the family can turn their table scraps into fine fresh eggs, and conservation of the waste food from the table will supply families with eggs, without buying expensive food besides.

8th. They are profitable layers from five months to five years, giving five useful years—while larger breeds will not pay after the second year.

9th. They make finest broilers, earliest and cheapest, when market is highest. No bird can be brought to broiler size as quickly and cheaply as the Leghorn.

10th. Their plump yellow carcasses are ideal in quantity and quality for family use. The main objection offered is that their carcasses are not large enough, but for most families they are, for they do not have to throw away a lot of fat, as they do on many large birds.

They are the "ne plus ultra" of poultrydom, and as the advertisement says: "Eventually, why not now?"

## Why I Like to Breed Buff Leghorns

By GUY HATTEN, Middletown, Ohio

**T**HERE are many reasons why I like to breed Buff Leghorns but I believe they narrow down to these two, Pleasure and Profit. I will say profit first, because if they did not pay very well, they would not be a success and I would not keep them even if I were able. The handsome profit they pay adds much to the pleasure of keeping them. All well bred Leghorns are money makers. This is proven by the fact that they are found on practically all large commercial plants, where a strict expense account is kept and they must pay a profit or their owners would go out of business or get some other breed. Any breed or variety of poultry can be made profitable (where there is a demand for them at all) if sold at fanciers' prices, but it takes the Leghorns to pay a profit where there is no other income derived from them except through their eggs and meat at market prices. How about the larger breeds? If you have ever studied the question, you will agree with me that it is the fanciers that make the money, with the exception of a few "bred to lay" farms that make a specialty of selling their eggs and chicks on this basis at a higher than market price. The larger breeds, aside from the fancier, are kept mostly by the farmer who raises his own feed, and too, the birds pick up a great deal of their feed around the cow lots and hog lots. Most of this is not taken into consideration. Yet these flocks do not pay as large a profit per dollar invested as the flock of the commercial Leghorn man, who charges up every cent of expense against his birds.

The greatest outlay in the poultry business is in hatching and raising your stock to the laying age. After your pullets begin laying they will pay a handsome profit—when housed and cared for properly, that is, if they do not spend too much time in broodiness as is the case with the larger breeds a majority of the time. The raising and hatching cost can be cut in two with Leghorns, considering that they will be paying producers at least a year longer than the larger breeds. Leghorn eggs will run much higher in fertility and a larger per cent of the fertile eggs will hatch good husky chicks. There is a great saving in eggs set, incubator space used, and in brooding as well, for the Leghorns are hatched later in the season, a more natural period for raising chicks, when less fuel and attention is needed. The time to sell cockerels for profit is when they weigh from  $1\frac{1}{2}$  to 2 pounds, for if kept until they weigh 4 pounds the price is usually only about half as high and you will be out at least your feed if they are kept to four pounds. The Leghorns will make this weight just as quick as the larger breeds and it is much easier to select the most promising cockerels in the Leghorns at this age than the cockerels of the larger breeds. The pullets will commence to lay from a month to two months earlier than the larger breeds and will have paid for most of their raising before the others begin to lay.

One hundred Leghorns can be kept in the same space and at the same cost as eighty larger birds. At the same rate of egg-production this would mean 25 per cent more eggs at the same cost. Twenty-five per cent dividends is what makes millionaires.

About the only complaint you hear against a Leghorn is its size. This accounts for their being able to pay such large dividends, through their ability to produce the same goods at a much lower cost. There are 300,000 Fords in Ohio for the same reason. So don't complain when you finally take your Leghorns to market, and they bring a little less per head than

the larger breed, for this is only more money in your pocket as they have paid this and much more through their extra production.

The Leghorns are noted for their beautiful curves, neat heads, graceful carriage and wide awake, active disposition. Add to this that fascinating, beautiful, nerve quieting color, buff, and you have a real fancier's bird. Many of our most beautiful song and wild birds are either yellow or partly yellow. Take the canary for instance. Would it be half so popular if it were another color? I think not. Nerve specialists prescribe rooms painted warm yellow or buff for their patients, with good results, too. It has been proven that it takes three degrees less heat to keep the occupants comfortable in a room painted buff than it does any other color. I have cured myself of many a case of nerves, after a hot, busy day at the office, by going out into my shady chicken run and working with my birds, especially my growing stock, studying their color, type, etc., and selecting my winners for my next winter's shows. For that is a big advantage you have in breeding Buffs. You can tell your sound colored birds at from five to eight weeks old; even the shade of color is discernible. After a little practice you can tell almost exactly what your chicks will be six months later. This enables you to cull your birds very early without danger of picking out the wrong birds.

I pedigree practically every chick. Knowing the dam and sire of the chick adds much interest as well as a great breeding knowledge to the game, and also enables me to improve my matings each season.

So for quieting, healthful recreation, raise Buff Leghorns, study their color, the individual habits of your birds. You will find it not only a pleasing pastime but profitable as well. If you are raising or are going to raise poultry as a business, you will make no mistake in the Buffs, because you will never tire of their color and you will find them most profitable. I have never been able to supply the demand for chicks, eggs and stock. Through selling Leghorn eggs and chicks you have a longer season of sales than with the larger breeds, as the Leghorns mature quickly; for this reason you can hatch from six weeks to two months later in the season, and with the right quality you will have no trouble selling the chicks; or if you wish to keep them they will soon be ready to lay and pay you a steady profit.

I do not sell an egg for eating from the first of February to the first of July. Five months' production during the heaviest laying period sold at good prices. This couldn't be done if there were not a reason. The reason is S. C. Buff Leghorns.

Each season I bring off a hatch during the first week in August. They are kept in the basement near the window, where they get fresh air, yet it is much cooler than outside. When it begins to get cooler outside, about the first of September, I put them out, and they "grow like weeds," as the saying goes. The pullets are always ready for the January shows. Two years ago my first pullet at Dayton was hatched August 10, and was laying during the show (January 1 to 6), in less than five months.

So for profit, don't pass up the Leghorns and for a beautiful color that is a pleasure to breed, get the Buffs.

## Points to Be Observed in Breeding Buff Leghorns for Color

By C. M. HERREN, La Junta, Colo.

**S**ELECT both males and females for evenness in shade in all parts, except that the tail of male may be a full shade darker than that of the other sections. The male should have strong undercolor. The undercolor of females may be less pronounced. The shafting of main wing flights and main tail feathers must be solid buff. If in the male they are deeper buff than the web, so much the better.

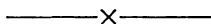
The shafting of the feathers of hackle, back and saddle of male must show strong coloring, that of female must show at least a fair coloring. (Good color of shafting is relative to the surface color. A bird of quite light surface color should have correspondingly light shafting and one of dark surface color should have correspondingly dark shafting.)

If the females of a mating are all of the exact shade desired in the females of the young, then select a male that is a full shade darker than the females with which he is to be mated. This gives the best color mating.

If females are lighter than the color desired, select a male of at least two shades darker and hold strong for deep undercolor and shafting. In such a case, just a hint of smoke in tail of male will not be amiss.

If the females are darker than the shade desired in the female offspring, and especially if they have strong undercolor, a male of the same shade of the females, or even a shade lighter, may be mated to them. Mealliness will not result from this color mating as was formerly thought. Mealliness is simply a reversion to earlier ancestral traits.

The last two matings will not give so large a percentage of good colored young as the first but must often be resorted to in consideration of type, station and other factors which are not subjects of this article.



## Black Leghorns and Why I Raise Them

By A. E. LLOYD, Grace, Idaho

The Black Leghorn was imported from Leghorn, Italy (hence the name Leghorn), in the early seventies, and was admitted to the Standard in 1876.

### Type

One used to hear the remark: "I would like to breed the Blacks if they only had as good type as some of the other varieties." I feel happy to know that such a remark is wholly uncalled for in the present-day Blacks, and one can find as good type as in any of the others. I do not wish to discredit any other variety, but I absolutely know that the Blacks are equal to any other variety of the Leghorn breed. Why should there be a difference in type in the varieties of any breed? Our Standard of Perfection has definitely marked out the ideal bird, and we should continue to breed to reach that ideal. Any variety of Leghorn that does not conform to the Standard in type is not a Leghorn, and the sooner all breeders will learn this one truth the nearer we will approach perfection. I have learned that whenever I have tried to increase weight other than what the Standard calls for I have been very much disappointed. There-



fore, let us accept our present Standard requirements and maintain our type.

### Color

The Black Leghorn differs from the other varieties in color only. It would be impossible for me to describe here that green sheen of color which gives to the Black Leghorns their distinction from all others. This alone makes the Blacks much sought after by those breeders who live in districts where smoke is a great drawback to the lighter colored varieties. The young of the Blacks escape the onslaught of the hawks, also.

In order that our younger breeders may not be confused over the color of feet found among so many Blacks, I would like to say the time is coming, and now is, when any Leghorn that has anything other than a yellow shank will not receive consideration among our breeders. If we want to breed birds with dark shanks it will be easy to take up some breed that has this quality, but we must insist that our birds have yellow shanks. Some breeders will say this is impossible to get and keep away from the light undercolor. This is not true. I have seen Black Leghorns with perfectly fast black undercolor and exceptionally yellow shanks. If we now had our Standard color realized we would have no need to work for our ideal.

### Why I Raise Them

There should be a good reason why any breeder chooses any certain breed or variety. (I wish to say in passing because a breeder chooses one of his liking that he should not discredit any other.) After breeding nearly every breed and a number of varieties of each breed, I finally decided that in order to produce the greatest number of eggs for the amount of feed required one must have the Leghorn breed; and then came the task of choosing the variety of this breed. After considering the varieties I selected the Blacks as my ideal bird.

Who are to say what birds are best.

And discredit others of Standard breeding;

Who boast that theirs, and not the rest,

Are only worth, at times, their feeding?

It's cowardly, I know, to in judgment sit,

Tearing down what some are needing;

'Tis better far that we charity get

For the birds we are not breeding.



## Developing a Strain of High Egg Producers

By C. T. PATTERSON, Patterson Leghorn Farm, Springfield, Mo.

ONE of the greatest problems which confronts the poultryman of today is to secure a higher egg production from his flock. Securing an occasionally phenomenally high producer is of little practical value where the rest of the flock maintain a low rate of production. After several years of work and study along this line we are thoroughly convinced that the two basic factors to be watched closely are heredity and environment.

The failure of either of these factors may cause failure in production. Nature imparts to each individual certain instincts, characters and abilities. These abilities develop according to their environment, so that we might say that the rate of egg production depends largely upon heredity and environment, or that the rate may be natural or acquired. To illustrate how this may be possible we find the hen which is given natural conditions with unlimited range and an opportunity to select her own

food will respond to nature and prepare for each season in its order; she will, therefore, produce eggs only during the spring season like the quail and prairie chicken, while if the same hen were given proper conditions for high egg production with a balanced ration, proper house, long days, etc., the production will be materially increased.

One test we made along this line led us to believe it is possible to handle a hen with the ability to produce 200 eggs in one year so that she would continue in good health, yet not produce a single egg in a year. This test we made during the spring when production was highest and used the same houses, etc., as with other hens, the difference being that each fourth day the hen was not given any feed, and also each fourth day she was not given any water, but the days without feed and water were not the same.

The hens handled in this way produced no eggs, while others of the same line of breeding, but fed and watered each day, maintained an 80 per cent production.

In other tests we find hens in the same pen handled in the same way, some of which are high producers, while others are low producers. One test indicates the value of environment, while the other shows the value of heredity.

Some breeders secure the best lines of breeding known, yet fail through lack of proper environment, while others secure stock with less valuable heredity, but make a better record because of supplying better conditions. Being thoroughly convinced that environment was of equal importance with heredity, our next problem was to find out just when to supply the proper conditions in order to get the best results.

Recognizing the three stages in the life of any animal, we studied the three stages in the life of the hen separately. The first stage is the embryonic stage, or the life in the egg. The second is the growing or developing stage which is from the time it is out of the egg till it is mature and reproducing. And the third is the mature or reproducing stage.

We find that under natural conditions the chick will hatch on the twenty-first day, but environment in the way of heat, etc., will cause the chick to hatch on the twentieth day, or the lack of these conditions will cause it to hatch on the twenty-second day.

Now we find that the embryo is made by cells dividing, growing and dividing again, so that the development of the embryo depends upon the rate of activity of these cells. After this series of tests we believe that all other things being equal, the chick which develops in twenty-two days will do in twenty-two days during their mature lives.

A nineteen-day chick and a twenty-three-day chick were each weakened so that the tests with them were unreliable.

In the study of the growing or developing stage, we remembered a passage learned when a boy, which was as follows: "Go to the ant, thou sluggard, consider her ways and be wise." In this case we went to the bee, which is very much the same. We find that the bee produces a queen and worker from the same grade of eggs by means of feeding. The larva from one egg when hatched is fed a certain kind of food and develops into a queen, which lays thousands and thousands of eggs, while the larva from another egg is fed a different food and develops into a worker which never lays an egg. If the queen larva dies, the bees feed one of the worker cells the queen food and, therefore, make a queen out of it, which lays eggs in numbers proportionate to the time it was fed the rich food.

In applying this test we found that the pullets which began to lay first usually made the highest producers, which would indicate that they were quick, alert and active, so they secured a good food supply and if an opportunity presented itself they would select a richer food supply.

Then the conditions which surround the mature hen will greatly influence her production as has been mentioned.

The foregoing points have been mentioned to show the necessity of observing something more than the number of eggs a hen produces during one year. The last and perhaps one of the most important points to be considered, is the rate of production.

In many cases the year's record seems to be the final test, but the one year test is only about 76 per cent accurate, while to use the rate of production as measured by the highest producing one hundred days is 86 per cent accurate, and in building a flock of high producers I prefer to know the rate of ability rather than the year's production.

I trapnest usually for six months, then select the one hundred consecutive days of highest production and call the number of eggs produced per cent, so if a hen produces seventy-five eggs in one hundred days, she is a 75 per cent hen, and if she produces eighty eggs in one hundred days, she is an 80 per cent hen. The egg-laying contests report the year's record which is their time of test, and is the thing for them to do, but the breeder has problems which are not solved by the contest reports.

I do not mean this as any reflection on the contests for they have given and are giving valuable information to the public. Nor do I say these things without an opportunity to know something of the work, for I was for five years with an experiment station, having charge of the National Egg-Laying Contests at Mountain Grove, Mo., for two years. I am now developing a farm and strain of my own. I am, of course, employing the best methods I know. By using the rate of production as a basis of measure, I have produced a more uniformly high producing flock than by using the year's production as a measure.

In selecting the male we use the record of the male's dam as a basis of measuring his egg production abilities, and, therefore, use males from hens which are above the average of the flock, but use the per cent of production as a basis of selection, rather than the year's production. The facts are if a hen has a high rate of production and ability to continue for one hundred days at the rate, it is the best evidence I have ever found of a high egg producer.

In summing up the points we mean to present, they are as follows:

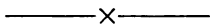
First—Hatch the chicks on the twentieth day.

Second—Bring the pullets to production at six months of age.

Third—Select females for breeders which show a high rate of production and ability to continue for one hundred consecutive days.

Fourth—Select males from good females.

Fifth—Consider your flock average to be of more importance than individual records.



## Leghorn Egg Type no Secret—Simply Defined

By C. T. PATTERSON, R. R. 4, Springfield, Mo.

**O**NLY a short time ago we were in a blacksmith shop. The blacksmith, who was a thorough, careful, hard worker, stepped to the door to cool for a few minutes. A wagon chanced to pass by which attracted the attention of the blacksmith and his comments were about as follows: That wagon passing there is not what it should be. The axle is sprung till the wheels are not properly lined. The front edges of the wheels are farther apart than the opposite edges and the

bottoms of the wheels are wider than the tops. This causes greater friction, making the load harder to pull and the wear on the wheels much greater.

Another man standing by remarked that this blacksmith could tell a good and bad wagon apart as they passed along the street and asked if it were possible to tell a good and bad hen as they pass by you in the yard. Our answer was, "Yes, this can be done to a reasonable degree of accuracy," but for me it is easier to select the good and bad hen than to tell how it is done. It is just like telling one how to throw a ball a certain distance; it is easier to throw the ball to a certain place than to tell how it is done.

There are, however, some rules or laws which help us in the selection of fowls for special purposes. If we want to select hens for high egg production they should be selected with different type than if they are to be selected for meat production. In making selections for production alone we find the contrast between the male and female is greater than when the selection is made for meat production.

In traveling through a Missouri county a short time ago this subject was under discussion and as we passed a large stock farm where large numbers of white faced cattle were in pasture it was difficult to distinguish the males and females, and not five miles from this place we passed by a large dairy where the cattle were in pasture about the same distance from the road as the beef cattle were but with the Jersey cattle we found no difficulty in distinguishing the male from the female. Our attention was then directed to the fowl and in passing purebred flocks we found that in the flocks of the heavier meat or all purpose breeds it was frequently difficult to distinguish between the males and females but with the birds mated for egg production the males were easily distinguished from the females.

The simple rule we get from this observation would be that in meat producing birds the male and female are alike in type while in the egg producers the male and female are opposite. This leads us to believe that if the male and female sexes were not developed the birds would develop exactly alike. To illustrate, if the sex of a male and female of the same breeding were destroyed during the early hours of incubation they would develop as non-sexual fowls and would be alike, and would be meat producers only. If this is true, and we believe it is, then it is reasonable to believe that the greater the difference in male and female characters the greater the sex development and the more the male and female resemble each other the less the sex development.

It also follows that the greater the sex development the greater the egg production and the less the sex development the less the egg production but the greater the meat production. The type, or perhaps it would be better to say shape in this case, is formed by the relative position of the back and keel or breast bone. The non-sexual fowl should give us a perfect meat producer of the breed. It has a rectangular shaped body, its back and keel bone running parallel, while the hen which produces 100 eggs in 100 days we will call a perfect producer for the breed. The female which approaches nearest perfection shows a triangular shaped body, the back remaining on a level, while the rear part of the keel bone is lowered leaving the body in a wedge shape with the point of the wedge in front.

The male having the same degree of sex development takes the opposite extreme so that a male which is a producer of high producers has a body shaped like a wedge but the wedge is reversed, the wide part of the wedge being in front and the point being to the rear, or the reverse of the female. Taking the female as she stands in the yard, due consideration must be given to the full crop which would give the hen more of

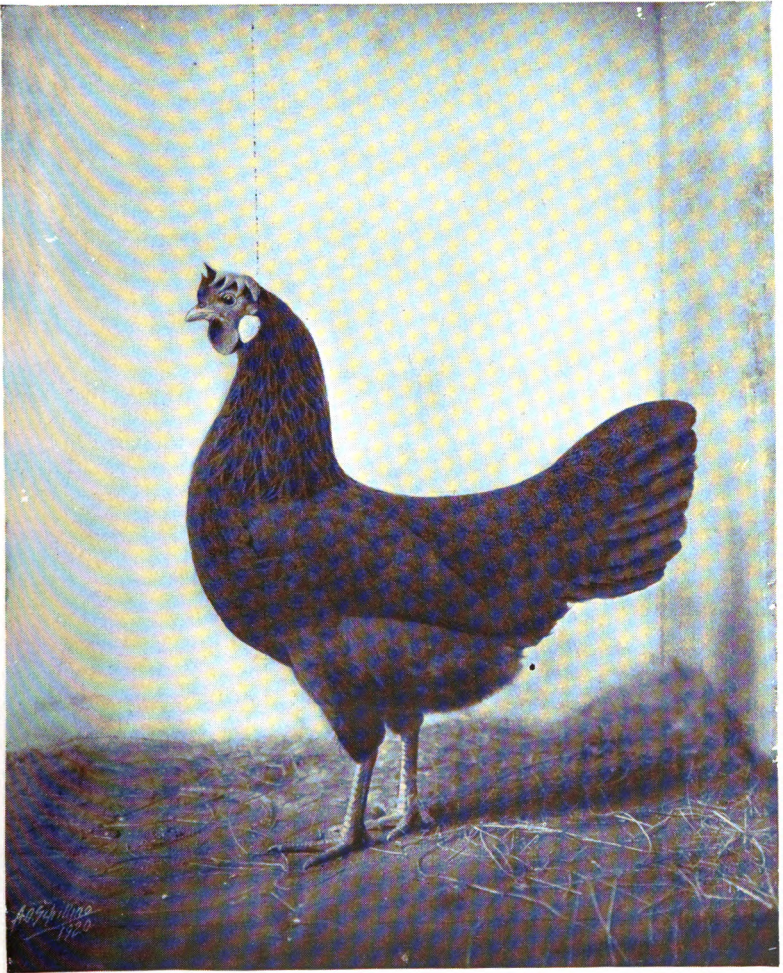




**IDEAL SINGLE COMB DARK BROWN LEGHORN MALE**  
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(For description see page 14.)





**IDEAL SINGLE COMB DARK BROWN LEGHORN FEMALE**  
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the appearance of a box shape. It must always be remembered that a hen changes her shape with a change of conditions. For example, a hen which has been broody for a week or two will not measure the same nor give the same appearance as she will when in a full laying condition.

Other factors besides type should be considered in selecting and breeding for egg production. Some factors indicating high production are a quick, active alert disposition, a bright, clear eye, a well developed comb, bleached out shanks, a good appetite and a desire to satisfy it. In type or shape select the males large in front and close behind, but in females the opposite, wide behind and close in front. The breeders to produce meat birds should be as nearly alike as possible.

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## Selecting the Males to Produce High Producing Females

By C. T. PATTERSON, Springfield, Mo.

**O**F THE many problems which confront the poultry breeder there is no problem more important and far reaching than the selection of the male. The male has long been considered half the flock, yet only those who have given the subject serious consideration act accordingly. With Leghorns, the breeding standard is one male with twenty females and if the male is half the flock he is worth as much from the viewpoint of the next flock as the twenty females, yet we often find the male in a breeding pen singly instead of being worth as much as all combined.

Just how to select the male is the question. We do not care to discuss this subject from the standpoint of show qualities for everyone can secure an American Standard of Perfection from *The Leghorn World* and use it as a guide which would be the highest authority on individual characteristics we have, but we will discuss it from the viewpoint of selecting for high egg-production.

We use the trapnest records and pedigree records as a guide in selection and mating which we believe is the best method known.

It is not everyone who is in a position to do trapnesting so it is important to be able to select good breeders from an examination of the bird itself.

The Hogan System is perhaps one of the best known systems of selection from an examination of the bird. In comparison of this system with trapnest records we find it to be 64 per cent accurate. As a guess would be 50 per cent accurate this system is 14 per cent good.

To some this may seem to be of little value when when we consider that one year's trapnest records are only about 75 per cent accurate it is not so bad after all. Then too we believe that any system of selection which is even one per cent good is worth while.

There are many other tests which should be taken into consideration at the time the selections are made. One test is the pigmentation test or perhaps better known as the shank color test. With birds which have yellow shanks the color is the same as that used in the yolk of eggs so that the hen which produces a large number of eggs bleaches the shanks and skin so they are light or almost white.

With fowls which have shanks with other colors than yellow the color of the yolk of the egg can be used instead of the color of the shanks or skin. The yolk is more easily influenced by a single feed than the shanks or skin.

Then there is the toenail test. The hen with long toenails indicates the loafer, while the one with the short toenails is the worker.

As to the early and late molters, the early molters are poor producers, etc.

All these tests, as well as others, should be taken into consideration, but the Hogan test is one that no breeder can get away from after he has once learned it.

The thickness or thinness of the pelvic bones, the distance between them and the distance from them to the keel bones are points everyone wants to know in making selections for high production.

On comparing this method of selection with the trapnest records we agree with Mr. Hogan in the selection of females provided all are in the same condition when tested, as hens change when broody, when molty, etc.

In the selection of the male Mr. Hogan and I cannot agree, for Mr. Hogan selects the male on the same basis as the female, however, with different measurements, while we select the males by opposite characters.

Our method of selection and breeding for high egg-production is to select females which have thin pelvic or pin bones which are well spread and good depth to the keel bone, while the male we want to be tight, hard and close or just the opposite of the female.

Finding this to work best from trapnesting we reasoned it out to be correct as follows: If we select a good dairy cow we want one which is narrow through the shoulders both ways, and widening farther back till she is wide and deep through the hips, but in selecting a male to produce high producers we select the male which has a powerful neck and shoulders but tapers back so he is narrow through the hips.

Even with man, the woman who is true to all feminine characteristics is narrow through the shoulders and wide through the hips, while the man of power is wide through the shoulders and narrow through the hips, etc., so in selecting the male and female for high egg-production we prefer for the sharp end of the wedge to point to the front of the hen but point back in the male.

We use the trapnest records as our basis of selection for breeding and, as many people wish to buy birds which test good by the Hogan test, this works out very satisfactorily, for I am always willing for anyone to take the best male on the farm by this test as I wouldn't use him myself.

As to the general vitality and appearance of the male we like for the bird to feel that he is the most important bird on earth and if we can agree with him the chances are he will get a favored position.

The selection of any animal will depend on what it is selected for, as to the characters it should possess.

If a person is breeding for meat production with cattle or chickens his problems are quite different than if he is breeding for milk or eggs. As milk and eggs are in about the same class so far as supplying human food is concerned and as each one is a product for the purpose of supporting life, we feel the dairy cow and the egg-producing hen can be easily compared.

It is a great temptation to carry the comparison to an extreme by showing some of the world record cows showing their shape, and with them show some bulls which have produced some wonderful producers. In almost every case the cow is thin through neck and shoulders but wide and deep through the hips; while the male, on the contrary, is broad and deep throughout neck and shoulders and narrow through the hips.

The comparison is a good one, but we feel that it is not necessary to use comparisons, for the birds speak for themselves. Everyone recognizes the influence of the sex in the development of different characters so that when two birds are fully developed and influenced by the sex there is little difficulty in distinguishing the males and females.

We have had the opportunity of handling six classes of sex influenced birds which are as follows: First, full-sexed males; second, full-sexed females; third, birds having both sexes; fourth, birds which have never developed either sex; fifth, males which have been desexed; and sixth, females which have been desexed.

The law of nature seems to be that when either sex is destroyed the animal not only fails to develop characters which are peculiar to that sex

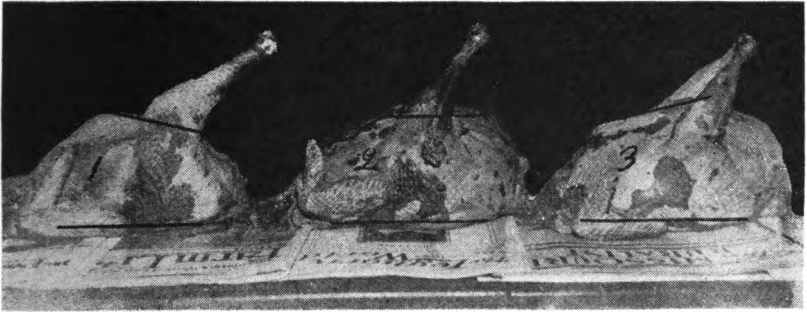


FIG. 1.—No. 1 is a full sexed male showing lines of breast bone and back. No. 2 is a desexed female. No. 3 is a high producing female. Note the opposite shape wedge of 1 and 3.



FIG. 2.—No. 1 is a full sexed male, a producer of high producers, showing point of keel bone and distance between pelvic bones. No. 2 is a desexed female. No. 3 is a high producing hen.

but will often approach characters belonging to the opposite sex. In developing our rules for selecting both male and female, we had in mind a non-sexual fowl only one of which we have ever seen. We observe that the sex influence causes the male and female to be different, so that the rule is, "Select breeders without the opposite sex characters."

In selecting the male and female having opposite characters, there is no question but that each should have a head; but there may be a question as to what is a masculine and what is a feminine head, etc. The size, shape, thickness, and relative position of the pelvic or pin bones and the keel bone are the basis of selecting the high and low producers by what

is known as the Hogan system. This we find to be good in the selection of females for we find the spread of the pin bones and the distance to the keel bone are sex characters and develop to a maximum, when the sex has reached its functional maximum.

With the male we find the opposite to be true, that the pin bones and pelvic bones get closer and tighter when the sex exerts its greatest influence. This opposite tendency causes the male and female to assume different shapes, the male being broader and deeper in front with the narrow part of the wedge behind, while the female is the opposite, having the narrow part of the wedge in front.

In birds with neither sex, both sexes or where the sex has been destroyed, the shape falls between the two extremes. We trapnest and use the trapnest records as a basis of selection in breeding for high egg production, but handling hundreds of birds each day and having the records in the house where they can be referred to while we have the birds in our hands has led us to one simple rule of selection.

Select breeders without the opposite sex characters. In order to illustrate more clearly our views, we are presenting two views of three birds, showing a side and rear view. Fig. 1 shows the side views of a male which is the sire of high producing pullets. Fig. 3 is a high producing hen, having produced more than 200 eggs in one year, while Fig. 2 is a desexed female; she had taken on fat so that neither breast bone nor back could be shown straight but were almost parallel, while the other two were not, one being shaped one way, while the other is the opposite. Fig. 2 shows rear view of the same three birds.

We do not claim this rule to be perfect but we do find that breeders which produce high producers are opposite in shape rather than alike.



## Leghorns the Profit Makers for the Farmer's Wife

By MRS. JOE MULLIGAN, St. Joseph, Ky.

**E**VERY farmer's wife should realize that after all it is the eggs that bring real profit. A Leghorn hen can be kept for this purpose and at the end of a couple of years given away with more profit on her ledger side than larger ones would have when put on the market.

They will make just as good fryers though not so large boned and will weigh pound for pound until two and one-half months old and have quality and flavor over the large chickens. The pullets require less time in which to reach maturity and can be hatched even in June if properly handled and brought to laying the fore part of November. My experience for a number of years has proven conclusively, that well-bred Leghorns are the most profitable egg yielders.

"Beauty and Utility" has been my hobby. The pleasure of owning the best pays in dollars and satisfaction. Any farmer's wife can easily attend a large flock of purebred birds in addition to her other work. As a matter of fact, I have each year cared for as many as eight hundred birds in one season. This entails some care, I acknowledge; but what can we accomplish successfully without work? I find this number enables me to have all the fryers my family can use, with many surplus cockerels and pullets, and because many of these birds were too valuable to sell to the local trade, I began twelve years ago to advertise. By doing so, I have found a market willing to pay for quality Leghorns and a big demand for the hens and ready-to-lay pullets each fall, and I sell all I can spare.

I set my mark high from the start. I bought the best money could buy, and started in on a small scale and then increased. "Beauty and Utility" can be combined by careful mating each year. Any farmer's wife can do what I have done and more, if she will select Standardbred Leghorns instead of mongrels. Each year I find my sales increasing, and while I am only a small breeder I cleared \$1,500 the past year.



## Leghorn Type—What It Is; Its Importance

By A. O. SCHILLING, Rochester, N. Y.

**C**ORRECT Leghorn type, according to the advanced and modern ideal, is probably one of the finest examples of the poultry breeders' art and skill. Modern ideals may embrace a great many beneficial qualities, but there have been cases in past history where they represent a multitude of sins. We are now passing through a period when the true type of this wonderful breed may be destroyed, because of the popular demand for productive strains of poultry.

Human nature is oftentimes rather fickle and sometimes requires considerable diplomacy and persuasion to guide it along channels of sound reasoning when certain elements or factions begin to assert themselves. History has repeatedly proven that true progress is sometimes obtained by great sacrifices, and during these battles for supremacy and righteousness some of us are laid by the wayside. **The principle of balance** is the one great factor that must always be considered if true progress shall be made. This applies to all matters pertaining to the natural laws of human existence and its progress.

This same principle of balance, as found in our best music, our choicest examples of art, and its relation to science, must also be the first consideration in establishing an ideal for a breed of poultry that is intended to play such an important part in our everyday existence as the hens that lay the millions of eggs for human consumption.

The foregoing seems to be a simple acknowledged fact, but we, as a highly civilized race, are not content with something that is useful alone. We demand that it shall also be beautiful, just as our architects aim at grace and symmetry in planning their great buildings and our designers strive to beautify our best makes of automobiles.

When creating a modern Leghorn Standard, it necessarily follows that we keep our useful Leghorn beautiful in order to maintain its popularity and preserve its existence.

The foregoing is the basic principle upon which modern poultry ideals are created: Each kind to fill a certain need to the fullest extent according to the best of our knowledge and judgment.

Leghorns being acknowledged as the greatest egg producers among our various breeds of domesticated poultry, naturally it follows that our Standard makers and progressive breeders shall strive to create a type that will be the most efficient in this respect and to make this type beautiful.

Fortunately the sprightly and active Leghorn lends itself wonderfully to a form of beautiful outlines and graceful curves. Therefore there seems to us no reason why this quality should not be developed to the highest state possible by the most progressive breeders of the country.

A Leghorn that can fill the foregoing requirements should be a bird of moderate size. It should have a body that will lend itself to great action and endurance and to keep a healthy system of internal organs.

With these physical requirements as the prime consideration it is

necessary that abnormalities in any respect would be very detrimental. In other words, we believe that oversize, excessive combs, extreme length of legs, over-abundant plumage, or extremely long shanks, would not be in harmony with an ideal that may be regarded as "balanced."

We believe that the modern Standard Leghorn ideal as accepted by the American Poultry Association at its recent convention is one that embodies these good qualities and embraces the requirements for a type that is both useful and beautiful.

It will be noted, after studying the illustrations of both male and female, that no abnormalities are represented or depicted.

The comb is of moderate size. The neck is proportionate and graceful. The body is of good length and depth and the breast is nicely rounded and full.

The legs are not too long or too short and set well on body to give proper balance.

These are the general shape characteristics and are the most important considerations.

In plumage quality it will be noted that, while this is a vital factor in creating a beautiful shape, no extremes are recognized or depicted.

First of all we must have a correct shaped body structure before we cover this with a coat of plumage which plays a very important part in the exterior shape of the bird.

In altogether too many cases during past years, we regret to state, judges did not seem to recognize or consider the actual underlying body type or flesh and bone structure of the specimens they were placing under the ribbons at the shows throughout the country.

Our forthcoming Standard of Perfection will contain a chapter of instructions to judges to handle birds and to consider these qualities when making their awards while judging classes at shows.

Having considered the basic principles upon which the modern American Leghorn Standard is founded, we shall now discuss some of the individual shape characteristics that play an important part in making an ideal Leghorn male or female.

We shall handle these subjects briefly on the principle of "cause and effect."

Avoid low-carried loose wings, because they destroy the symmetry of outline and conceal the harmony of underline with the curve of top line.

Low, loose-carried wings often accompany high shoulders.

High tailed specimens are tabooed in good breeding, because they are not pleasing to look at and spoil the symmetry.

On the other hand, don't go to extremes for low tail carriage. One is as bad as the other.

The ideal specimen is broad and flat at shoulders, and carries this width well back to stern. Determine this by placing the hand over body at shoulders and pass it along towards stern, with thumb on one side and forefingers on other side.

Under this examination the body should feel flat on top, carrying good proportionate width to stern.

Depth of body and correct length of keel are also very important and should be determined as described above.

On account of the fact that the male body structure differs from that of the female, it should not be expected that the male possess the same relative width of front and stern as the female. The masculine type is broader at shoulder, and across back than the feminine type, in poultry as well as in other animals.

This subject is really of such importance that to do it justice would require a separate article and therefore we aim to simply call attention

to actual anatomical structure of an ideal specimen in a general way.

Avoid specimens having long, narrow shanks. These generally accompany narrow skull and sunken eyes with crow beaks.

The ideal specimen has its legs set well towards center of body, giving the bird the correct balance. This is important, as an unbalanced body carriage influences all other sections of the specimen. Here again we have the principle of balance nicely illustrated; for example, if the legs are set too far back, it is the natural thing for a specimen to raise its breast and shoulders to maintain its correct equilibrium in order to move about naturally, the result being that you will consequently have a specimen with undesirable high shoulders, a bad sloping back and ultimately a decided break at juncture of tail. In connection with correct setting of legs, we have quality of bone and muscle.

Avoid specimens that have a sunken shank. A perfect Leghorn shank is one that is oval in shape from a cross sectional viewpoint. In fact it is more nearly egg-shape with the smallest point in the rear, but slightly flattened at sides. Full, round shanks belong to the meat breeds and are not conducive to fast movement or action. Sunken shanked specimens are inclined to be buck-kneed, and knock-knees devote lack of vigor and vitality which are detrimental to production or exhibition.

I have purposely left head, beak, eye and head adjuncts until the last, for the reason that they represent the most important earmarks of a valuable specimen which is intended as a breeder or exhibition specimen.

The ideal specimen should have a full, round eye, with alert, intelligent expression. Look into the eye of one of your birds and try to determine just what instinctive thoughts are passing through its brain. We all know that some dogs and animals know more than others and so it is with poultry.

Intelligence is linked with temperament, and a bad tempered bird is his own worst enemy when he is up for judgment. Likewise a bad tempered bird is generally a very nervous bird, and this failing is not conducive to high production.

Considering the correct head structure of a good Leghorn, we desire the comb with a good solid base where it joins the skull. Roughness and wrinkles here are akin to coarseness and should be avoided.

The lids of the eyes should open wide enough to show some of the inner skin in front of the eye. An open, alert eye of this kind devotes vigor, health and vitality.

Viewing the head from front, the skull should not project beyond eyelids and the eye should be prominent enough in its setting to extend beyond the skull, giving the bird a sight-radius of a full half sphere for each eye. The beak should be moderate size and nicely turned. Crow beaks or parrot beaks are most undesirable.

The comb, ear lobes and wattles should be moderate in size and of smooth texture. Correct size of comb that may be considered ideal seems to be rather a mooted question. For example, I have known prominent judges who seemed to interpret the ideal as rather a small, neat comb with round pencil-point serrations. We also have breeders and judges who believe the ideal comb should be larger, having a slight resemblance to Minorca character, while some breeders for production believe that a large beefy comb is an identification mark of a heavy layer.

The present Standard calls for a nice medium-sized comb, that cannot be classed as small, neither is it inclined to be beefy or heavy. This is as it should be for the following reasons: Close observers of breed types and breed character in poultry know that excessive combs or head adjuncts are unnecessary for high production and undesirable for beauty. Why burden a hen with a great piece of her anatomy flopping around her eyes

with every move of the head? It requires vitality to endure this constantly, and it takes good, healthy blood to grow this heavy comb and keep it well. It is true that certain strains of Leghorns having beefy combs have proven themselves good layers, but it is also true that the greatest proportion of the best layers have moderate-sized combs, probably slightly larger than the best exhibition specimens. But we also know of strains that have Standard-sized combs and some even smaller than Standard which have made high egg records. It is our belief that size of comb is no safe identification mark and that the comb which is neat and of moderate size, nicely turned, is the correct ideal for a Leghorn female, either for exhibition or production.

We did not intend to go into a discussion of production and high egg records in this article but we realize that in this connection it may be well to state our reasons and make a few remarks explaining why the present ideal Leghorn type is a productive exhibition type.

As we write these lines and set forth our views and interpretations of the ideal modern Leghorn, the thought comes to mind, and we wonder how many breeders of Leghorns in the country today realize the amount of thought, effort and study the breeder of real quality prize winners is putting into his work and breeding operations from year to year in order to win the coveted ribbon at some show in his vicinity, and we also wonder if the novice realizes the real value he is buying when he is purchasing a bird from a well established strain, that are only the results of constant consideration and the application of the foregoing qualities and characters when this breeder is making his matings each year.

The man who made the statement, "Bloodlines tell the story," surely spoke a real truth, for known ancestry is a great factor in breeding high-class specimens either for exhibition or production.

Last, but not least for consideration of ideal Leghorn type is feather quality and texture. The ideal Leghorn male is not one possessing a long tail and saddle, neither is he a short, hard feathered bird. He is a well furnished bird with sufficient saddle feather, growing from back to fill in well at juncture of tail and to form a beautiful concave sweep, from a profile view. The saddle should not be so long as to extend very much below fluff. Extreme long saddled birds do not show the correct underline required for a typical Standard exhibition Leghorn male.

Leghorn males possessing extremely long, flowing saddles generally have a feather quality that is inclined to be stringy and the lesser or main sickles are apt to grow twisted and dangling. Correct ideal feather quality is of sufficient length, having proper width to hold its place and shape as it leaves the body, and having good width it overlaps well and makes a concave back that will hold up naturally when in full feather without breaking at juncture of tail.

The influence of feather quality and character on the ideal Leghorn female type is equally as important as that of the male. Correct feather quality for the ideal female should be of good length and have width enough to lie closely and firmly to body. Extreme width of feather produces fluffiness, while narrow feathering causes the surface to appear rough and uneven. Here again we have an example of moderation in selecting the ideal.

The ideal female carries her wings neatly folded against the sides of body. Avoid the specimens that appear to pinch in at stern with points of flights tucked under body feathers. Such specimens are generally found to be narrow in body tests and lack capacity. A defective stern that bags or breaks down after a few weeks' laying is one that lacks the proper length of keel bone. The ideal female has her keel bone extending well forward and well back, supporting her abdomen and holding it up



into place. Muscular relaxation due to age is also the cause of illshaped and baggy abdomens.

In order to fully appreciate modern Standard Leghorn type it is necessary to understand the reason for certain specified descriptions that are considered ideal, and therefore we have attempted to point out to the beginner or inexperienced breeder some of the variations that take place in the very best of matings, and are regarded as undesirable. It is also our desire to explain as briefly as possible wherein the present accepted ideal or Standard Leghorn type is a type that lends itself to production as well as beauty of form.

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## The Lovely Leghorns and Why I Like Them

By MRS. M. M. GREEN, Albany, Mo.

**T**HE love of beauty is innate with all of us. Put a wee toddler in the garden, and he will stumble over the cabbages and beans in his haste to reach the row of flaming poppies—or throw away his bread and jam to chase the butterfly that flutters tantalizingly just beyond his fingers. Watch the face of the prosperous business man light up and those ugly, sarcastic lines disappear when he tells of the trout stream of his boyhood and the ravine where the cardinal nested, or of the shimmering lake set in some wonderful forest where adventure lurked at every turn. His wealth, perhaps, has come from the devastation of this same forest—his wealth and those ugly lines. But joy—real, genuine, soul-satisfying joy—was left back where he became obsessed with the idea that only the material things counted in this life, that beauty crept into this old world by accident—a meaningless, insignificant thing with no purpose behind it—and that the love of streams and forests and nesting birds was but a form of weakness to be ruthlessly smothered out.

To be sure, a grown man can not go on chasing butterflies forever. And with some of us the chasing of the bread and jam leaves time for mighty little else, no matter what our inclinations might be.

And that's why we like the "Lovely Leghorn." A farmer's wife has a multitude of tasks, and the seeking of beauty, just for beauty's sake, is too many times impossible for her. Her sister in the city may take great pleasure in the cultivation of rare plants that blossom under her skillful hands; but always the farm wife has taken the title of helpmeet seriously, and to do her part toward the filling of the family pocketbook comes first with her. It is the egg money that keeps the grocery bill paid, buys the necessary clothing and the few luxuries. The care of the flock falls to her; the carrying of feed and water, the cleaning of the houses, the fighting of vermin, the tramping through the dew and rain, burning hot sun or bitter cold, the stumbling trip at dark to close the coops against the night prowlers. Without the element of beauty, it is a weary, humdrum monotony of tiresome, dirty work. Yet, with the daintiness and charm of the lovely little Leghorn pullets to delight her, the matchless grace of the males and the amusing, masculine vanity of them, their snowy whiteness or their glorious gleaming colors, the trip to the poultry yard becomes a joy and a diversion. If she finds the time to study a bit over the mating of them, the bringing out of a fuller curve here, a bit more length there, a little more poise and balance, a whiteness, perhaps, that rivals her snowiest linen, or a wealth of rich coloring and beautiful pencillings that an artist would despair of copying, she finds avenues of thought opening up before her, the broadening effect of which her sister in the city would not find equaled in her "Art" club.

We have often thought that it was a sad mistake to give the name

"dual-purpose fowl" to those birds that can have no purpose but utility. Rather it should have been used to designate the fowl that is not only "useful," but whose exquisite beauty of line and color can delight the eyes of all these busy caretakers who would find it difficult to satisfy the craving for these things in a less practical way. And what could that be but the Leghorn, "essentially a breed of alert carriage and graceful curves"? One can go into raptures over the alert grace and the loveliness of a startled deer, but one does not enthuse over the charm of an elephant. He challenges our admiration, of course, and we marvel at his size and strength, and grant that he is useful; but beautiful, never!

From the very minute the baby Leghorn tumbles into the nursery tray, and, bright-eyed and independent, starts out to shift for himself, to the day the judge passes on him in the showroom, he is never anything else than lovely. There is no ragged, ugly shape, no featherless, sunburned skin. He is always trim, trig and graceful. And from the day the wee pullet decides that feathers are more desirable than down, she is a "Lovely Leghorn Hen" in miniature—dainty, plump, and demure—singing, as she goes about her daily affairs, a little song that you have to listen closely to hear, but which also is the song of the Leghorn hen in miniature.

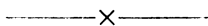
And—such pets as they can be! Not the stupidity of a heavy, clumsy bird that is either too lazy to move out of your way, or too greedy to miss a chance for an extra handful of grain you may have in your pocket, but an intelligent friendliness that is not given until you have proven yourself worthy of it. We have many hens that we need only open the trapnest door for, as the first glance tells us their band number. But they are not so easily dismissed as that. Not until we have given them a friendly stroke or two, will they jump down, contented. Males that have not been handled for weeks will, with a bit of persuasion, pose in the open and allow us to approach and pet them.

The would-be owner of a flock of the "Lovely Leghorns" can surely find the coloring that pleases him best among the wide range of White, Black, Buff and Silvers—all "Lovely Leghorns" beyond a doubt. There could, of course, be but one "Loveliest Leghorn," and that the Brown. Picture in your mind a marble image with the stateliness, the grace and sweeping curves, the wealth of saddle and tail coverts of an ideal Leghorn male. Then imagine him clothed in gleaming, metallic green, every neck and saddle feather accurately bordered with flaming, vivid red; and, to relieve all this vividness, put in an inset of soft rich brown as a wing bay, an oval lobe of snowy white, and legs of clear bright yellow! Could a lovelier thing be imagined—or a more satisfying thing for a color-starved eye?

I have scarcely touched upon the usefulness of the Leghorn. Surely there is no one who does not know that the Leghorn was the first efficiency advocate. Centuries ago the bright-eyed Leghorn hen got the idea into her wise little head that to **specialize** was the thing. There was one thing she could do, and ordinary mortals could not. Therefore, she would do that one thing and do it in the most efficient way, and leave to less gifted creatures the task of keeping the eggs warm through the long weary weeks; her time was too precious to waste. She would economize on time and she would also cut down the overhead expenses. Just beyond the poultry yard there were bugs and worms and weed seeds and shattered grains, a world of delicious morsels waiting for bright eyes to find them. The big fat hens in the yards would not exert themselves unnecessarily, but she just doted on these excursions a-field. So she would lay the eggs and at the least expense to her owners. It took so little to keep up her small body, and besides she was not too lazy to get a share of that by her own effort, from the waste of the farm. The big fat hens

loved to sit better than anything else in the world; very well, just let them sit—she would provide the eggs.

And so the "Lovely Leghorn Hen" has come down through the centuries searching and singing and laying, using her time to best advantage, turning her food to best account, saving us a dollar here and a dollar there—taking a little less time to mature, a little less house room, a little less cost per dozen eggs, an egg that is a little more attractive, and all with a little less feed and a little less attention. We have profited by her industry and marveled at her efficiency. But let's not forget to stop occasionally, as we keep encouraging her to speed up on production, and admire her loveliness. It should mean as much to us as to the dollars she saves us, and the harder and steadier we may be forced to work, the more need that beauty, symbolic of all those things we must not forget, be fused into the sordidness of everyday toil. So here's to the "Lovely Leghorn," the real dual-purpose fowl—feast for the eyes, and feast for table.



## The Satisfaction of Keeping a Flock of Leghorns

**Leghorn Profits Surpass the Plymouth Rocks, Reds and Wyandottes**

By MRS. HARRISON BARTSHE, Wheatland, Mo.

**A** FEW years ago our grandparents kept on their farms a few mongrel hens, which received scarcely no care or attention. But things have changed. The poultry industry is one of the leading industries of the day. Just look at the commercial egg farms from coast to coast. Most all of them raise Leghorns, and no breed is more beautiful than the Leghorn with all its grace and style and a variety of colors to please the most fastidious.

I have never had the pleasure of attending a real big poultry show, but at the smaller shows I notice no other breed attracts more attention; nor do you hear as many exclamations of admiration for any other fowl as for the Leghorn.

The Leghorn is the farmer's true friend. They produce more pounds of eggs on less feed than the heavy breeds. They mature more quickly and begin laying earlier and will also produce a one and one-half to two-pound broiler quicker and on less feed than the heavy breeds. At this age they are very tender and finely flavored. Another advantage they have over the larger breeds is that a much greater per cent of their eggs hatch when placed in the incubator.

There is a great fight now going on against the Leghorns but this is only natural and goes to prove that they are in the lead when it comes to real value, for it is always the leading horse in the race that the loudest talk is about, and the leading candidate is the fellow at whom the most dirt is thrown.

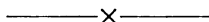
It is said of the Leghorns that they are not fit to be eaten, and that they lay small and undersized eggs, but a great deal of this fault lies with the breeders and not the breed. If we would be more particular about our breeding pen and see that nothing below Standard weight were used, in a few years we would not be bothered about these runty hens and small, undersized eggs, for a Standard-sized hen will lay a two-ounce egg, or better. This has been proven by government and state contests. According to the egg-laying contest held in New Jersey it was found that the average weight of eggs from all breeds was 2.01 ounces each. The

two-years' contest shows but four-fifths of an ounce per dozen greater size for the Reds than for Leghorns, one-fourth of an ounce per dozen larger for the Rocks than the Leghorns, and the Wyandottes—one of the large breeds—actually laid a smaller egg than the Leghorns did.

Quoting from the official report of that contest the first year the Leghorns paid a net profit of \$4.34 above feed, while the American breeds paid a profit of only \$2.90 above their feed, and the second year the Leghorns paid a profit of \$3.41 while the American breeds averaged a little less than \$1.50. Does it not go to prove that the Leghorn is the fowl the farmer needs? Then when about ready to market the mature fowls, if we would shut them up and feed a good fattening ration for ten days or two weeks, they would go on the market in just as good a condition, with just as tender meat, as any of the larger breeds.

We breed the Dark Brown Leghorns. They are the original Leghorns, just as Mother Nature made them: and as nature always work best, this dark brown color was given them for protection against hawks, crows, owls and many other enemies. The baby chicks are stronger and more easily raised than the others. A flock of Brown Leghorns present an even and uniform color, with no dirty-looking or faded-out fowls to compare with the others, and when you get ready to take them to the show there is no washing, bleaching, fussing or fixing needed; they are always ready to go.

The Dark Brown variety in a recent egg-laying contest made a world's egg record—above everything else. Also, one of our fellow breeders of the Dark Browns won first prize on white eggs at the National egg show at Kansas City, 1921. So—with championship in both productivity and quality—who would not be pleased to own a flock of Dark Brown Leghorns?



## Judging Single Comb White Leghorns

By M. L. CHAPMAN, Wilburtha Poultry Farms, Trenton Junction, N. J.

**I**N PREPARING an article on judging any breed of poultry of course the writer realizes that his article is not really so much for those who wish to judge fowls as it is to instruct the general public as to the methods and reasons whereby a judge arrives at his conclusions.

Many of the criticisms of show management and the awarding of ribbons arise for the reason that many breeders do not understand the problem from the standpoint of the judge. I write the following lines with the hope that they may be helpful to any who desire to show or judge America's premier exhibition fowl.

To judge White Leghorns satisfactorily where the class is large and the competition keen is a task which should be undertaken only by a person with a thorough knowledge of the breed, steady nerves, and an unruffled demeanor in trying circumstances. In fact, the actions and demeanor of the judge has about as much influence in satisfying the breeders of the thoroughness of his work as does his knowledge.

Some judges come to the showroom early and hang around visiting with everybody, looking at some breeder's birds in company with the breeder, then when they start work they work along for a few minutes, see some acquaintance with whom they shake hands and exchange salutations. Their actions indicate that they are not giving the work their undivided attention.

The proper procedure for one who judges fowls is to keep away from the showroom and exhibitors until about such time as his classes are ready. He should then go into the showroom and proceed immediately to

go about his duties. Put on your linen duster and start for the White Leghorn aisle.

Most judges employ some system of marks on the cards on the coops to check up by. There are many systems, but for the present I will give mine which will probably suffice. I start at the first coop and give the bird the once-over, thoroughly but briefly. If he happens to be just a good, fair run of bird, I put one cross on the corner of his card. This simply means that the bird has been examined. I proceed in this way until I find a bird that is a little above the average. In this case, I put two crosses on his card. As I proceed down the aisle, if I come to a bird that stands out as a star I put three crosses on his card. This is very simple but I think sufficient in most cases. If the class is very large, say fifty birds in a class, I would perhaps use four crosses on perhaps two or three birds.

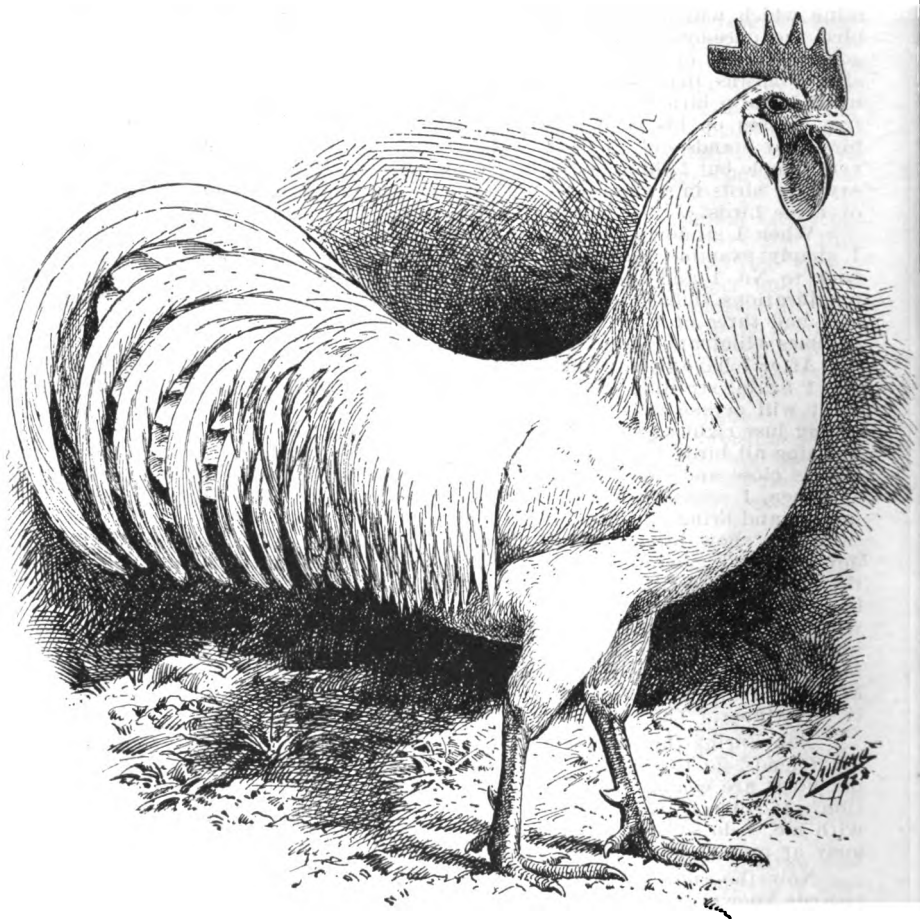
When I go down the aisle the first time, I do not take the birds out. I simply examine them and note my impressions as above. I then go back to No. 1 and take each bird out and examine him closely for disqualifications, defects, disposition, etc. Sometimes on examination, a bird that had three or four crosses on his card will show such defects that he becomes eliminated from further consideration.

After I have gone through the class in this manner, I then go back to No. 1 again, strolling leisurely down the aisle giving them the once-over as it will occasionally happen that some real star might not have been posing just right and may have escaped your first inspection. I especially examine all birds that have checks for the first prize, and if the competition is close and there is any doubt in mind as to which one is the best specimen, I select as many coops as needed in some spot where the light is good and bring all these birds together. I then give each bird an opportunity to show himself at his best, let him have a little time to settle down, etc. I generally hold a female up in front of the males and let them show off a little bit to see how much style and interest in life they have generally. After I have given them all fair opportunity to show what they have, I make my decision promptly. Nothing is so discouraging to a large bunch of exhibitors as for a judge to stand up on his tip-toes holding a ribbon in his hand looking at two birds for about a half hour. It is an indication that he is uncertain in his own mind as to which is the winner. This has a bad effect on the exhibitors.

Now during this time when I am working I do not stop to gossip with my friends, go to lunch in the middle of a class, or go over to see how my birds are coming along, or allow anything to interrupt my concentration. If some friends come into the showroom and wish to shake hands with me, I do so briefly and after a word or so will tell them that I am busy at present but will see them later, and get rid of them.

Now the rules of most shows say that a judge is not to make his awards known except through the show committee—in other words, carry his awards to the office which will send someone out to mark them up. I have always felt that this is a bad plan, and I do not follow it. There is generally a bunch of fellows following the judge who always take an interest in his work. I like this. I like to work in the open and have the people see the birds as I see them. I never rope off an aisle where I can be alone while judging. I don't care how close the people come or how many watch me, but I don't allow anybody to talk to me. When I have finished my inspection of the birds, I promptly make my decision and make them on the cards, then turning to the crowd I say, "There they are, boys. How is it?" If any exhibitor wants to know the reason for my decision in any particular instance, I am right there to tell him.

In judging a class of birds of course one must be governed by the

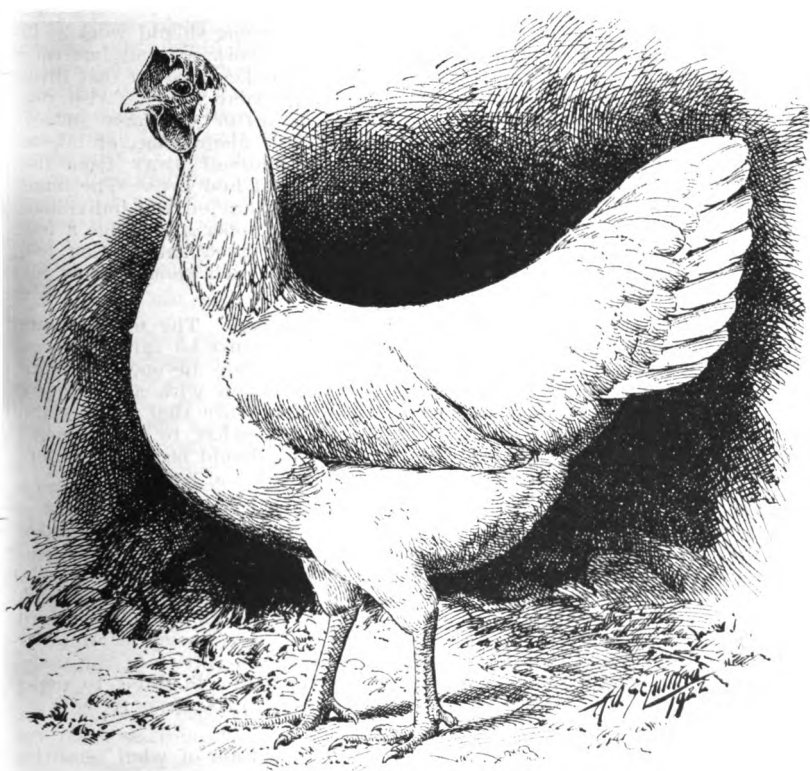


**IDEAL SINGLE COMB WHITE LEGHORN MALE**

**Drawn by A. O. Schilling**

**For The National Single Comb White Leghorn Club**

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**IDEAL SINGLE COMB WHITE LEGHORN FEMALE**

**Drawn by A. O. Schilling**

**For The National Single Comb White Leghorn Club**

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scale of points as given in the American Standard of Perfection. For instance: If you get two birds and find that one is a little deficient in breast but good in head, while the other has a poor head but good breast shape, your knowledge of values as indicated by the Standard of Perfection will tell you that the Leghorn comb is valued at six points while shape of breast is only allowed five points. In this case the bird with the best comb would win. Of course it is necessary to study the Standard and to thoroughly familiarize yourself with the value of the different sections.

Judging fowls is such an arduous task that no one should work at it too long at a time. Two or three hours of steady work without interruption will cause your eyes to lose something of their keenness so that little defects and disqualifications are liable to escape your notice. Also you are liable to overlook fine details of shape. So after you have judged about that long, knock off and go to lunch, if it is about time, or take a walk around the block. Do anything to take yourself away from the showroom and birds where you can rest your mind and eyes. The number of hours that a man can judge depends somewhat on the individual. Some can work all day and then come back after supper and judge a few classes by electric light, and seem to give pretty good satisfaction too. On the other hand, some men cannot do this, but each should know his own limits in this respect.

In judging pens the problem is slightly different. The male counts half and the four females count half which point must be carefully considered when you are confronted by a superior male in one pen with ordinary females and superior females in another pen with an ordinary male bird. Also where the competition is keen, be sure that you handle every bird. Your decision must be governed somewhat by the general harmony of the pen as a whole. The four females should match as closely as possible and the male bird should harmonize with the females.

For instance, take a pen of females that are good birds but just a little low stationed we will say. Now if you put with such a pen a male bird that is extra long in shanks you have an unharmonious collection of birds that do not belong together. They look like two different breeds. Or here is another condition that you sometimes are confronted with in show pens. Four splendid, extra large, rugged hens with a fine male bird that is below Standard weight for his breed. He seems smaller than he is by comparison with his larger mates. The size and station of the male, also the color, should bear some relation to his mates in order to make the pen present the best appearance. All these things have to be considered.

I have not attempted to give much of a description of what qualities an exhibition White Leghorn should possess because if you have not progressed beyond that stage of knowledge you are not ready to study the judging of birds. This is intended more particularly as a suggestion of demeanor and methods to follow, after you already have the adequate knowledge of exhibition White Leghorns.

This knowledge of exhibition characteristics can best be obtained from a thorough study of the American Standard of Perfection. A copy of this book may be obtained for the price of \$2.50, from The Leghorn World, Waverly, Iowa, or from the Secretary of the National Single Comb White Leghorn Club, A. F. Rolf, R. F. D., Metairie, New Orleans, La.



## Pointers on Marketing White Leghorn Eggs

By U. L. MELONY, Egg Buyer, New York, N. Y.

**E**GGs, whether white, brown or mixed in color to sell for top value should be sorted as to quality, size and cleanliness. It is hardly necessary to state that quality comes first. By quality we mean absolute new-laid eggs, full, strong-bodied, sweet, clean and free from blood rings, meat or blood clots, shrinkage—in fact, any defects that would be detrimental to their taste or appearance. It is rather difficult to describe in words what is termed a large or good average-sized egg, and to best explain this, we will refer to the weight. The weight should be two ounces per egg; the Standard does not permit packing enough large eggs to overcome the underweight of small eggs; in all, uniformity of size is necessary. Cleanliness we might say comes next to quality, and this means proper care regarding the nests. A dirty nest means dirty feet, and the two combined make dirty eggs. Some poultry plants prefer to clear their eggs after gathering from the nests. While this is not entirely objectionable, we know from experience that it has a tendency to show its effects on the quality, especially during warm weather.

### Packing

Eggs should be packed in the regular light wood cases, new or second-hand. By second-hand cases we mean cases that have been used, but are acceptable by the freight or express companies as entitled to the lowest freight rate. All such cases should be gone over thoroughly, renailed and made good and sound and attention paid to the sweetness of them. Don't use any case that has any foul odor; be sure also that the fillers, flats and cushions are equally free from any odors as we all know that eggs are susceptible to absorbing certain odors. The case should contain in the bottom a cushion of sweet, dry excelsior or something that will answer the same purpose to prevent breakage; top of case should be covered with a flat on top of which put either sufficient excelsior to make a cushion, a corrugated flat or an excelsior pad.

During the extreme cold weather, in addition to the above, the cases may be lined on the inside, before placing the fillers or flats in, with clean, dry paper—newspapers will answer the purpose. You will find this helps considerably to prevent eggs from freezing in transit. This precaution will act directly opposite in extreme warm weather and prevent eggs from getting heated especially if the eggs, cases, fillers, etc., are held in a cool, dry place until ready for shipment.

Note—Beginning with the storage season newspapers or other printed matter should not be used; such is objectionable to the keeping or holding qualities of eggs for such purposes.

### Quality Requirements

Hennery white eggs should be packed as aforementioned. It is absolutely necessary that eggs coming under the grades of hennery stock consist of new-laid quality, and most always means eggs produced on an actual poultry plant and shipped direct from the plant to the jobber and wholesaler.

These products must be chalk white and free from cream-tinted eggs; the weight shall be twenty-four ounces or better to the dozen or fifty-seven pounds gross, using the regular light wood cases above mentioned. It is not advisable to place extremely large or misshaped eggs in with the standard grades as they are apt to get broken in transit and stain or muss

up the balance. It is our opinion that, for those wishing to make a name for their particular goods, all eggs should be candled.

Buyers purchasing regular marks of high class eggs are many on all markets, and when they have an established trade on such eggs will pay the price and very often go without any rather than accept other shipments, preferring to wait until their regular marks arrive.

### Shipping

It has been our experience for the past twenty-five years that express shipments are preferable to freight, as delivery is most always prompt; in addition small lots are handled more carefully by express companies.

In concluding, it may not be out of place to advise those who are beginners, have medium size plants, or at times have not sufficient quantities to ship full cases of their own production, to try to combine with others and make their shipments together. By so doing they can get their shipments on the market more promptly, which means better quality and better net results.



## Mating Rose Comb Brown Leghorns

By OTTO CHASTAIN, Mitchell, Ind.

**T**HE breeding of Rose Comb Brown Leghorns is very interesting to anyone who cares enough for them to watch their development from week to week. In breeding Dark Browns, we select our male to conform to Standard description as nearly as possible. He must be from a good laying and winning strain, very proud of himself and full of pep. In fact this applies to both Dark Brown and Light Brown. I prefer a small, neat comb, and it must fit closely to his head, with spike running straight back or upturned slightly at point. Eyes should be a rich bay, ear lobes white or creamy white and his neck or hackle and back should show the same shade of rich cherry red. Each feather should have a black or greenish black center entirely encircled by the red. His back should not be too short, and should be somewhat concave, sloping upward toward a well-furnished and well-spread tail, without showing an abrupt break at the base of the tail. His body, breast and thighs should be black, and his shanks yellow. His mates, the females, have a very dark and coarsely stippled brown breast, usually a shade lighter than black, free from brick and shafting. Their shanks should show yellow, but a dusky yellow is good.

The Light Browns differ in color only. I like the male to have a rich hackle with the black center in feather not nearly so pronounced as in the Dark male and I want his back to be as free from black stripe as possible. The breast and body should be a rather dull black, and if a few reddish brown spots appear on breast I like him better. His shanks must be a rich yellow. His mates should have very finely stippled soft, golden-brown backs, wings and body, and their color a rich salmon, fading to a lighter shade under the body. The neck usually shows a rich golden feather edging with black center. I like the tail of both Dark and Light females to have not less than seven feathers on each side and eight is better. The tail must be well spread. Imagine, if you please, a bird of the above description in the bloom of health, with bright red combs and wattles and among our best as an egg producer. Is it any wonder that we who try them never change for any others?

## Abcess of the Feet of the Leghorn (Bumblefoot)

By DR. B. F. KAUPP

### Introduction

**E**SPECIALLY in the latter part of the summer, many Leghorns, as well as other breeds, and especially the heavy-laying hens, will be noted to have a swelling in the ball of the foot. After a while this condition becomes more aggravated and the bird may become lame and the condition may even interfere with the bird to the extent of causing loss in egg production.

### Cause of Abscess of the Feet

We have made quite extensive investigation into the cause of abscess of the feet in this laboratory, believing that the cause was of bacterial origin.

We have found that the domestic fowl is quite resistant to the common pus producing germs. In 1918 we carried out a very systematic study along this line obtaining strains of the various organisms from various sources including abscesses of man, horses, and other animals.\* The following is a general summary: That the domestic fowl has great resistance to certain common pus producing organisms is shown by the fact that to one young cockerel of three pounds weight there was given 28 cc (a cc is approximately 15 drops) of a 3-day-old bouillon culture of *Staphylococcus pyogenes aureus* and *Staphylococcus pyogenes albus* with no noticeable effect. The *S. p. aureus* was originally isolated from a funicle of human origin and had been passed as one of the common pus producing organisms. Pus in the chicken is always of a cheesy nature and in our sub-inoculations into rabbits we always caused an abscess with this organism. The abscess never had a thin liquid pus but the pus was always more of a cheesy tendency.

In these feet with abscess it is always noticed that they are filled with a cheesy pus. This abscess must be cut across and the cheesy material scraped out. After doing this swab out with pure iodine and return the hen to the pen. Leave a pledget of cotton saturated with iodine in the wound and repeat the treatment once a day. The cases invariably get well.

That chickens are quite resistant to pus producing germs is again shown by the fact that we carelessly caponize them not using antiseptic precautions, in many cases, and leave a gaping wound in the abdomen and yet only about one or two per cent die after the operation.

Again, the germs isolated from the abscess of the feet when inoculated into the soft structures of the ball of the foot of a hen caused heat, pain, and swelling and after a few days recovery usually took place without abscess forming while the same organism inoculated under the skin of a rabbit caused an abscess as described above.

It is after the bird is tired out with a long year's work and her resistance is lowered and she possibly has a bruise on the sole of the foot caused by jumping on something hard that the germs gain a foothold and cause an abscess. At times the inflammation spreads to surrounding structures involving the tendons and bone, and death of the bird finally results in spite of any treatment.

\* Studies in Abdominal Purulent Conditions of the Hen and Some Studies in the Resistance of the Fowl to the Pus Producing Animals, by B. F. Kaupp, Jour. Am. Vet. Med. Assn. Col. LIII, N. S. Vol. 6, No. 3, pp. 381-409, June, 1918.

## Brown Leghorns the Ideal Fowls for the Southland

By ARTHUR T. BRIDGES, Route 3-B, Arlington, Texas

**S**EVERAL factors must be considered in order to determine the best breed of fowls for any given section: First, the climate; second, conditions under which they must be raised; third, market conditions; and fourth, this leads to the kind of poultry farming offering best economical advantages for the given section. The southern part of the United States is nearer the same average yearly temperature of Italy than any other section. It rarely reaches freezing temperature in Italy, except in the extreme northern part. The Brown Leghorn being a native of the sunny land of the ancient Romans is perfectly at home in our southern climate.

In the south, we have comparatively few large cities. Consequently, we do not have large commercial egg farms. Most of our poultry is raised on general farms just as a side line. The fact is the farm hen's egg determines the market for eggs in this section and so does the farmer's surplus fryer set the price on all fryers. It goes without saying that the chicken that can make its way on the farm and pay a profit is the chicken that suits this section. No chicken on earth is better suited to utilize the range of a farm than the Brown Leghorn. They're the greatest rustlers that grow. Their color protects them from hawks, wolves and other predatory animals. They are of such native vitality that they may be raised with the least possible loss from infertile eggs, weak germs, and general debility. These two points cannot be overestimated as in this country numerous beasts of prey abound, and there are also numerous diseases and insects not so common in cooler climates. Give a Brown Leghorn a good sand pile and it will usually keep itself free from insects. Give it one second's warning and no wolf can catch it.

Another point that renders the Brown Leghorn the ideal farm chicken is the fact that they hold their color remarkably well and very little conditioning is necessary in getting them ready for the showroom. My cockerel that took first at our last great Premier show was picked up from the yard without even his feet being washed. The first pullet at the last Dallas fair was taken out of the top of a tree where she had roosted all fall. This fact makes it mighty convenient for the farmer who hasn't time to spend washing and doping them up if he wishes to show his birds. Brown Leghorns do not require an expert poultryman in order to produce good profits.

Because of our large farming population, our few large cities and our other meat producing live stock, the only dependable market for poultry products we have here is for eggs. Poultry meat is practically always produced here at a loss. Of course occasionally an early bunch might show a small profit. People who do not expect to make money on their flocks here but keep them for pleasure or home use may keep the larger or the so-called combination breeds but there is only one breed for the majority of farmers or others in this section who want a profit and that is LEGHORNS—exclusive egg-type birds. Furthermore, their long life, early maturity, and natural vitality more than offset the few cents that might be made on surplus cockerels with the meat breeds. The fact is the Leghorns, if properly fattened, makes the best chicken meat in the world, and as long as we raise the pullets to lay the eggs we'll have plenty of choice meat at home, get plenty of nice white eggs, and have money to jingle in our pockets.

## Some of My Ideas and Ideals in Regard to Dark Brown Leghorns

By G. S. KORELL, Route 7, Columbus, Ohio

**I**T WOULD be entirely impossible in the limited scope of this work to deal with ALL the features of producing the modern Dark Brown Leghorn, even if I presumed to know it all, which I hasten to assure my readers is not the case. So I will be content with dwelling briefly on just a few of the outstanding qualities that I have gone after hard in order to inculcate them into my birds, individually and collectively.

### Substance of Body and Frame

I am not in favor of increasing the Standard weight of Leghorns, but I am in favor of holding them right up to weights now required by the Standard, or even in going a half pound or so better just for good measure. I despise and detest those little "toppy" cockerels whose bodies are too short for their wings; when you "heft" a bird of this kind the weight compares not unfavorably with a toy balloon. I think every breeder of Dark Browns will understand what I mean. These birds nearly always have nice neat combs, concave beaks and good sweeping carriage, which no doubt accounts for their almost universal appearance. But, take my advice and steer as clear of these as you would a rattlesnake. They are a snare and delusion, and will lead you into a blind alley in a very short time, if you yield to the temptation to use them as breeders.

In order for a cockerel to stand up under the strain of being conditioned, trained and shipped to a show—kept always on nerves for a week during the show, with very little sleep or rest—then the return trip home and later possibly service in the breeding yards—a bird, to stand up under this, must have the necessary size and substance. You must have a good foundation upon which to build. You've got to have a big, long body with a big, straight breast bone.

It's all right to have good big wings on a cockerel, but you want a still bigger body inside the wings, and you want the wings to be carried level and straight. Avoid the wings that slope down and have a tendency to sag. That is always a sign of weakness and poor vitality; the bird simply does not have enough pep to hold up his wings. You can't put a Packard on a Ford chassis. If you don't have the well-built "under-body" put up on a good substantial pair of underpinnings (legs), with plenty of width at shoulders and hips, and plenty of depth from shoulders to front point of breast bone and from hips to keel, then I say, no matter how good a comb and head, how good the tail carriage, or how hot the color, you really haven't anything. I would not give twenty cents a pound for those little "cocky" males and little "pullet-hens" that seem to be dwarfs—old heads on young shoulders.

### Head Points

It has been said that to emphasize the importance of the comb is a sign of the beginner, and, if so, then I am still a beginner, because I have never ceased admiring a nice, neat head. Of course where the beginner makes his mistake is in seeing nothing but the head. I demand that an otherwise all-round bird must have a neat five-point comb, with long blade in rear turning up like a sled runner. It must be straight and firm and free from defects. Nothing but an absolutely red eye should be tolerated. These head points I find fairly easy to regulate if a little care is given to selection.

### **Tail Carriage**

We don't often get a bird with tail carried too low, so that to require low tails goes without saying. The secret of lowering the tails is in selecting breeders with good wide profuse feathering in the saddles and across the backs. To produce and keep on producing low tails requires constant vigilance in selecting the breeders. We have to almost literally hold the tails down. In every flock of any size there are at least a few individuals with low carried tails. These must be used even though you come out with a pen of only three or four breeders where you thought you would have a mating of twenty-five or thirty birds.

### **The Dark Brown Female**

Hens and pullets must have the same size and substance of body to stand up under the strain of assimilating enough feed to produce 175 to 200 eggs a year. And when I say eggs, I mean big eggs. Feel for the long keel bone and that depth of body in selecting females. Get the necessary egg machinery there before you can expect the finished output in the form of eggs. Get a pair of legs under the egg machine that will carry her to the end of the race and will enable her to dig out the result.

### **In Conclusion**

The reader no doubt has gathered from the foregoing that I demand a bigger, stronger Leghorn. That is what I am driving at, but I want it without any Minorca crosses. I want it pure Leghorn made bigger and better from within and not without, as in the case of some so-called "English" Leghorns.



## **Twenty Years Mating and Breeding Rose Comb Brown Leghorns**

By WM. T. LIDDELL, Greenwich, N. Y.

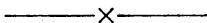
**T**HE first Rose Combs that I secured were sadly deficient in combs, the combs being coarse and beefy, often falling to one side on the males and covering or obstructing one of the eyes. Another bad defect was a hole or cavity in the center of the comb. These defects I had hard work in disposing of, as it took several years before they were bred out. Many times they would appear on an otherwise good specimen after I thought it had been disposed of. I am now pleased to say that neither of those defects appear in my strains. When I found a bird showing a lopped comb or one with a hole in it, it was discarded from the breeding yard.

Some twenty years ago when I first undertook to improve them, males had practically no striping in the saddle and the hackle showed several shades on the same bird. The tails were high and it was next to an impossibility to find specimens otherwise. The birds exhibited were not to be compared in any way with those one sees in the larger shows of today. Careful selection of my Dark females of good size and lowest tails, mating them to males with best in striping, even in surface color of neck and saddle, and dark, sound undercolor, and following this up each year resulted in a slight improvement. But it was slow on account of the few birds I grew and had to select from. The work is interesting if, as is the case with the writer, one has only spare moments from week to week to devote to it.

In producing the Light Browns I followed the same lines on comb and head points, at the same time always keeping in mind to select birds—both

male and female—with good length backs for egg type, and those having as near an even curve or slope to tail as possible. For breeding the Light Brown I like a male that has an orange colored hackle with a good sound stripe that does not crowd out at the end of the feather, with no striping showing in the saddle or back and free as possible from red on wing. Mate him to fine stippled females free as possible from shafting in back and wing feathering, also showing no brick or red on wing. Be particular in selecting all breeders that do not have high tails, no matter how good they may be otherwise, keeping in mind that high-tailed Leghorns have no admirers.

In selecting a breeding male always look for one that stands with legs wide apart, and one that is active and ready to fight all covers at sight, which in my way of thinking is the best sign of vitality. My experience is that Rose Comb Browns sired by such males grow rapidly, are hardy and easy to rear, and when on free range are almost proof from hawks, crows and birds of prey. Their dusky brown color naturally aids them, together with the vitality they possess when bred from such vigorous males as above described. Finally, select all your birds with good length shanks, the upstanding kind, and never the low-down, short-legged birds often-times termed “creepers.”



## The Beauty and Utility Value of Rose Comb White Leghorns

By J. M. CHASE, Walkkill, N. Y.

**I**N THE eyes of those who really love poultry not alone for the actual cash returns but also from an appreciation of real beauty, there seem no reasons why Rose Comb White Leghorns should not lead all the rest. This statement is made, not to discourage many other worthy varieties, both beautiful and profitable, but simply to give credit where credit is due. The American Standard of Perfection lists well over one hundred varieties of Standard fowl, practically all of which must have exhibited some merit either as to utility or as to beauty in order that they might secure admittance, but the fact that a great many of these Standard varieties are rapidly dying out goes to prove that in the final analysis they must be lacking somewhere.

It is quite possible that ten years hence the Standard will contain less rather than more varieties in spite of the fact that almost yearly some new variety is heralded by some breeder as the “coming” fowl.

Over a period of twenty-five years, there is no test of any variety or breed which is so true an index of merit as that of universal popularity, and to those who have known the poultry industry for that period of time—the one outstanding feature is the remarkable increase in the number of Leghorn fowls throughout the world. The increase is perhaps most noticeable in America as a whole but has been very marked indeed in other continents as well.

This popularity, immense in its scope, has been due in a large measure to utility reasons and not at all to those of a sentimental nature. The general public likes beauty according to its lights but seldom indeed is it willing to sacrifice profit to beauty. Finding then that by the maintenance of members of the Leghorn family, it is perfectly feasible to combine beauty and usefulness, the result has been that without question there are produced each year more Leghorn chicks than chicks of any other five breeds and probably of all others combined.

In spite of the efforts of a certain element of the market men who

wish to discredit Leghorns in order to buy them more cheaply, in spite of tremendous advertising of the heavier breeds of poultry by specialty clubs, and even a certain undefined antagonism on the part of some educational institutions, Leghorns have moved forward rapidly and surely until they have now reached a point where they dominate the poultry world through merit in efficient production.

To refer more specifically to that one best variety—Rose Comb White Leghorns—a short description will serve to enlighten those who are not familiar with them. As a variety that are supposedly identical in shape, size, carriage and vigor with all varieties of Leghorns; as a result of these characteristics, very naturally they are egg producers of the highest class. They mature rapidly, coming to the laying stage early in life and are peculiarly persistent layers of fancy white eggs.

In common with Single Comb White Leghorns, they are blessed with the absence of dark pin feathers, which adds to their appearance when dressed at any age and which has been an advantage over the colored varieties of Leghorns. In this same connection, it is well to state that the snowy white plumage renders a flock of White Leghorns on range a spectacle to delight the eye of the lover of beauty, for the white against the green of the range makes a most delightful picture.

This variety which has the advantages given above over the colored varieties of Leghorns has still one more qualification which gives it a natural advantage over the only other variety of White Leghorns—and that is the rose comb.

Breeders of other varieties endeavor to belittle the advantages of the frost-proof rose comb but in spite of that fact it is a very efficient natural advantage. It is all very well to argue that the comb may not freeze so quickly as a single comb but that the wattles are all alike and freeze at the same time. As applied to the male birds, which do not lay the eggs anyhow, that reasoning does very well, although even then any male bird freezing both comb and wattles must surely be damaged more than one that does not freeze the comb. But when it comes to females the great advantage is very evident, for a Rose Comb White Leghorn female **never** freezes either her comb or wattles in any housing conditions which can possibly be called humane and is thus enabled to devote her energies to egg production while her Single Comb sister is devoting a part of hers to healing a frozen comb.

To approach the argument from the other angle: Can anyone mention any situation whatever, in which a single comb is superior to a rose comb? It is all very well to say as many do, "Well, I like the looks of it better," which is no reason but a matter of opinion as to beauty, and it does not seem to have had any serious effect on the popularity of White Wyandottes with their rose comb nonfreezing head gear.

Rose Comb White Leghorns undeniably have every natural efficient advantage which any other variety of Leghorn possesses, and in addition are superior to each as to comb or color. They are hardy in all respects, easily raised, the eggs hatch well, they are quiet, easily tamed and not destructive in their habits—in fact they well merit the name accorded them. "The One Best Variety of Poultry."

Like other Leghorns they are superior to all heavier varieties in the fact that they mature earlier, at less cost, and that as a whole they produce more eggs at a much lower cost. As to the production of meat, the advantage is not quite so pronounced, although a Leghorn hen weighing four and one-half pounds is not materially lighter than the average so-called heavier breeds. The present Standard for Leghorns requires hens to be four pounds, Plymouth Rock hens seven and one-half pounds, Wyandotte hens six and one-half pounds, and Rhode Island Red hens six and

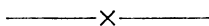


one-half pounds. Yet, the New York state College of Agriculture, in its rules for certifying valuable hens for breeding purposes, will consider no Leghorn hen under three and one-half, or one-half pound under Standard weight, but will certify hens of any of the three other heavier breeds mentioned weighing five pounds, thus allowing them from three to five times as much variation from the required weight. The reason for this is to permit the heavier breeds a reduction in weight that will allow them to approach Leghorn size and type which is necessary for heavy egg production in practically all cases.

A weight of five pounds on Rose Comb White Leghorn hens of good Leghorn type is not unusual, so it is perfectly evident that as meat producers it is possible for them to rank very highly, while those who have never had the pleasure of eating a Rose Comb White Leghorn chicken at the "fryer" stage have a delightful experience still due them.

The lack of more general popularity of Rose Comb White Leghorns is not in any way a fault of the variety. They have been unfortunate in being a "younger sister" to the most popular variety in existence and have been but little advertised. To know them intimately is to admire them immensely for, in addition to being the world's most efficient egg producers, they are beautiful beyond compare—vigorous, active, alert, snowy white, with a handsome, even comb and bright yellow legs—ornamental wherever placed.

The breeder or breeder-to-be can do no better than to become a producer of Rose Comb White Leghorns.



## The Silver Leghorns

By JOHN HANSENS, R. R. 3, San Diego, Calif.

**O**F ALL the various varieties of the Leghorn family, none are more beautiful or more worthy of consideration than the Silvers. Belonging, as they do, to a breed of fowls that is at once well known, popular, of exceedingly graceful type and carriage and noted for its ability to produce large numbers of eggs at the minimum cost of production, the Silvers offer opportunities to the breeder who desires to have a flock of fowl that are strikingly beautiful and at the same time good producers of eggs—second to none.

Nothing is more handsome among domestic poultry than a good Silver Leghorn male, with his black breast and tail and flowing hackle and saddle of silvery white, with a black stripe running through the feathers of these sections. His back is white, also his shoulders and a strong black bar runs across the wing, sharply dividing the wing.

The mate to this bird is a dainty female with plumage of a soft silvery gray—stippled with darker gray—on back, body and wings. Her hackle is of silvery white with a black stripe, her breast a light salmon; she has a black tail and presents a most pleasing appearance, whether in a flock or as a single specimen.

The ideal Silver Leghorn is, first of all, a Leghorn with the same characteristics as the other varieties of Leghorns as to type, carriage, size, color of eyes, ear lobes, legs and laying qualities—surely a breed type of outstanding qualities and a color scheme not surpassed by any other variety of domestic fowl.

The Silvers, while just as active and alert as other Leghorns, readily respond to handling and petting and can easily be made as docile as larger fowls.

We have found that the Silvers excel as table fowl and in dressing

young birds of the same age and apparent size (several varieties of Leghorns) the Silvers will present the best and meatiest carcasses.

Here then is a variety decidedly worth while. To the beginner especially the variety offers unlimited opportunities as the field is by no means overcrowded and the breeder would be less hampered than he might be with a variety more extensively bred and success, therefore, would be easier of attainment.



## Heavy Layers and How We Produce Them

By MRS. MILFORD NORMAN, Aurora, Mo.

**A**T FIRST we did not have the trap nest, so for a number of years we used the Hogan system in selecting our yards and also culling the farm flock. This system is not perfect but was much better than nothing. In the beginning while culling the flock we would select the best hens in measurement for eggs, also for good colors. For our breeding pens we then mated these hens to the best males we could get for eggs and good color.

The second year we kept a cockerel from our best laying hen and culled the same again, selecting the best hens we had. This second season we had three yards. These hens and pullets were selected the first of January as birds that are laying in January will also lay during the summer. In one of these yards we placed the very select in measurement for eggs. How Yard No. 3 did lay! From this mating I kept the cockerels for our flock the next year.

We also selected our yards again and used a cockerel from Yard No. 3 to mate back to the same yard and from this mating were produced the birds that made such good winnings in the Eighth National Egg-Laying Contest at Mountain Grove, Mo. After these birds had been in the laying contest we could keep cockerels from hens with an official record of better than 200 eggs.

During the last three years we have used the trap nest and I strongly urge that you trapnest your birds at least a few months each year. A good time for this is during December, January and February. If you pedigreed your stock you would have to continue throughout the spring and early summer. You could select your best layers for your breeding pens by trapnesting for the three months and greatly improve your flocks.

At any time we find an undesirable hen we cull her out. Once each year we go through the flock and cull. We also treat for lice at this time. It would take too long to go into details as to how we cull, but I will state briefly the following points to be considered:

**Vitality:** First, they must have vitality. Vitality is the basic principle upon which success or failure of poultry keeping depends, because no fowl with low vitality is capable of standing up under the strain of heavy egg production. Fowls that are inactive, listless, have a snaky or crow head, long beak or shrunk, scaly comb show a decided lack of vitality.

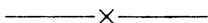
**Molt:** A poor layer in most cases is an early molter.

**Body Capacity:** A good layer must have a good abdominal capacity to consume and assimilate the amount of food necessary to produce a large number of eggs.

**Pigmentation:** A close physiological relationship exists between the laying activities of fowls and the amount of yellow pigment in the bodies. The change in yellow pigment occurs in the beak, eyelids, ear lobes, quills of feathers, shanks and other parts of the body. At the end of the laying season the shank of a good layer is bleached out.

These points considered all together make a good test by which you can take out the culls and greatly increase your egg production. However, you can not always tell the best layers in a flock of good producers, so we use the trapnest and only keep cockerels from the hens that make good egg records.

A male bird is more than half the flock so we know just how important it is that he be from a high producing hen and also have a sire that was from a high producing hen. I like to keep cockerels with egg records back a few generations as in this way the egg-laying habit is so fixed that a very large percentage of their progeny will be high producers. I feel that our success in this line has been in the selection of the male birds. But since it is now possible to obtain males from reliable breeders with good record hens back of them, much time can be saved in building up a flock of heavy layers by obtaining foundation stock from only the best breeders.



## Rational Treatment of Poultry Diseases With Special Reference to the Problems of the Leghorn Producer

By DR. B. F. KAUPP, Poultry Investigator and Pathologist, North Carolina Experiment Station, State College Station, Raleigh, N. C. Also author of Anatomy of the Domestic Fowl, Poultry Diseases, Poultry Culture, Sanitation and Hygiene, and Essentials of Poultry Raising.

### Introduction

**L**EGHORNS are sometimes spoken of as belonging to the more delicate of the breeds, but if properly cared for and handled they prove just as satisfactory as the larger breeds. While the larger breeds excel as meat birds, so does the Leghorn excel as an egg producer.

Leghorn chicks should not be reared with larger breeds such as Rhode Island Reds or Plymouth Rocks, as larger birds overrun smaller baby chicks and soon weaken them by their constant knocks and the smaller birds show a heavier mortality. When reared by themselves or with smaller breeds the mortality should not run any higher than among other breeds.

It is the intent to take up briefly just a very few of the diseases affecting birds and those the Leghorn breeder, among others, must keep "a lookout for" and be prepared to combat. As a rule commercial people do not have very trying times with diseases if careful attention is given to providing a proper building with suitable ventilation and comfort, litter for exercise of the birds (as exercise is essential to good health) and proper feed, which includes green feed and meat and bone meal to insure proper mineral and fat soluble vitamins. All these and many other precautions are essential for good health.

Of these diseases I shall take up mites and lice as two common causes of trouble among our fowls and the group of roup diseases and the group of diarrhoea.

### Mites on Fowls

Mites are very small parasites, in their adult state being scarcely the size of a small pin head. Mites live and multiply in the cracks and

crevices of the perch poles and on the walls and nests of the henhouse. In these quarters they lay their eggs, these eggs hatch in a very few days and the mites, pale in color, soon develop to mature size. The mites come out at night and swarm over the hens to suck their blood and when in millions, as we have sometimes observed them, cause the death of the fowls.

The mite varies in color from a pale gray color when not gorged with blood, to a reddish color when engorged with blood. They are provided with six pairs of legs when they are first hatched and at this time are very small. After molting a few times they are sexually mature and are provided with eight pairs of legs.

It is necessary to keep a constant lookout for these enemies of the henhouse. Turn the perch pole over, and if a few mites are present in the house, you will find them in clusters on the under side of the perch as a small fuzzy mass. The cracks of the perch poles may be filled with the parasites and a fuzzy material seen. This fuzzy-like material is the shed skins of the mites. When the henhouse is neglected these mites may literally swarm over the entire house, and a person entering the house may become covered with them. These mites will also cause the hens to die rapidly. We investigated one such farm in which the owner thought he had a contagious disease among his fowls. The birds would fall off the perch poles at night and the laying hens were dying on the nests. Another investigation showed that neglect cost the owner an entire flock of half-grown bantams which were brooded in a combination sitting and brooding coop. Still another outbreak of this kind occurred in some hens which were kept shut up in coops about eighteen inches square. Three hens had died in two days. The question was asked, after no disease appeared to show in the internal organs, whether the birds were affected with parasites. An investigation showed the dead birds to be swarming with mites and the coops and the entire walls covered with the crawling mites. This development came quickly and that is the way you will often find it in hot weather. The mites multiply very rapidly. Millions will be produced in just a very few hot days.

### How to Combat Mites

Since mites leave the hens in the daytime and live in the cracks and crevices and in the droppings on the dropping boards and multiply in these localities, this must be the point of first attack in the problem of eradication. The first point of attack should always be where a parasite multiplies.

Sparrows may carry mites, mites may be carried on clothing, or mites may be carried by small animals and by the introduction of new birds. A flock may be absolutely free from mites today, but that does not mean that they will be tomorrow.

As a preventative the perch poles and their supports should be painted each spring before warm weather with some product which will keep mites away. Some products, as kerosene and dips diluted with water, will kill all mites the liquid comes in contact with, but as soon as the liquid dries, mites can run over the same surface and even multiply in the cracks and crevices. Where the house is infested to only a small extent, the mites may be confined, at least for the most part, to the perch poles. Under these conditions painting the perch poles may be sufficient. When the mites are still more prevalent they may then be found in the nests, swarming over the walls and under these conditions no doubt will be present in sufficient numbers to be killing the hens. We have found that Arrow Carbolineum will eradicate mites thoroughly. The liquid is painted or sprayed in the roosts and permitted to soak in. With a second applica-

tion in a day or two, your troubles are over. After that, one application each year is enough. The entire interior of the house may be painted, including the nest boxes and no further trouble will be experienced with mites if the Carbolineum is painted on once each year, which we have found sufficient.

### **Lice on Fowls**

Lice of birds embrace a group of biting lice; their bodies are flat and their mouth parts are arranged for biting and cutting. They live upon feathers, epidermis or scales of the skin, and secretions of the body of the bird. The louse is small, in some instances scarcely as large as a pin head and in others much larger. The louse presents a long appearance and is easily seen. They are white to bluish in color. The louse is divided into three parts, namely: Head, provided with mouth parts for chewing; a thorax, provided with three pairs of legs; an abdomen, which presents the appearance of being segmented.

As to the part of the bird upon which lice may be found, we may say that there are three groups: First, those that infest the body; second, those that infest the head and neck; third, those that infest the feathers.

### **Lice That Infest the Body**

The most common lice which infest the body are those of the genera *Menopon* and *Gonoides*. Species of these two genera may be found on chickens and on the bodies of turkeys and of the water fowls, as geese and ducks. Each kind of bird has its own kind of lice, that is, a louse of a duck will not live on a Leghorn and thrive. These lice are found on the body of the fowl alone, and if a hen be examined by pushing the feathers back the wrong way, especially in the region of the vent, the lice will be seen either running over the skin or over the feathers. Often it will be noted that the lice lay their eggs in large clusters on the fluff of the feathers and are readily seen. Since lice multiply, then, on the bird, the first point of attack is ridding a bird of this pest is to treat the bird. This treatment will be taken up presently.

### **Lice That Infest the Head and Neck**

Some species of lice infest the head and neck of the adult fowl as well as the baby chick and the range birds. These lice cannot be found on any other part of the body. To find them one must part the feathers in the region of the neck, and the eggs, somewhat different from those of the body louse, and with a tendency to stick to the feather singly, will be observed attached to the fluff of the neck feathers. The lice will be found close to the skin.

### **The Depluming Louse**

There are certain lice that live upon and destroy the large flight and main tail feathers of fowls. These lice are easily seen as they are dark in color, slender and long, and in prominent places. These lice rapidly multiply and when in large numbers soon devour the webs of the feathers, leaving nothing but the stubs of the feathers.

### **Effects of Lice Upon the Fowls**

Chicks hatched in an incubator are free from lice and stay so until they are placed with lousy hens or chicks or in quarters in which lousy hens and chicks have been kept. Lice produce irritation; the effect of large numbers upon birds is quite marked. The lousy birds scratch, pick at their feathers, show signs of being drowsy, may refuse to eat, and in growing birds development is retarded.

Young chicks infested with lice often sit around, moping, with wings hanging down, and in a week or two may die. For this reason brooder

chicks sometimes thrive better, grow faster, and are freer from certain ailments than chicks hatched by a hen. We have known the head louse to attack a brood of baby chicks running with a hen and all the chicks droop and die in five days in spite of the treatment calculated to rid them of the lice.

The effect of lice on older birds is not so severe as upon younger ones, but is noted in conditions of flesh and in the production of eggs. The irritation is sometimes so severe that sitting hens desert their nests. Their combs may become dark or even black, shrivelled, dry, hard, and in upright combs, they are noted to lop over to one side, and the laying hens soon fail in their production of eggs. The birds are unable to rest day or night and become emaciated.

### **Dealing With Lice Infestation—The Head and Neck Lice**

In setting a hen, dust her thoroughly over body, vent fluff, neck and head with some good nicotine lice powder, at the time of setting. Dust her again thoroughly when she is taken from the nest and watch the heads of the baby chicks for the appearance of lice. Usually they appear in the region of the head and neck on the baby chick, and if not attended to at once, will kill the whole flock in very short order. For the head and neck lice, once they get on the baby chick, thoroughly work down to the skin of the baby chick either some nicotine lice powder as zenoleum lice powder or finely powdered sodium fluoride. Similar treatment is required for the head and neck lice of the adult birds.

### **The Body Lice**

The most common lice of fowls are the body lice. Either blue ointment or dusting powder may be used. In using the blue ointment, secure a pound can of fifty per cent mercurial ointment and a pound of vaseline. Mix the two together thoroughly and apply by rubbing a piece as large as a pea or larger thoroughly into the vent fluff and around the anus. One good application will usually rid the fowl of the infestation of the body louse. If it is the desire to use a powder then we recommend either a nicotine powder or plain powdered sodium fluoride. Secure a pan sixteen inches in diameter and about four inches deep; grasping the hen firmly by the legs with the head down, hold her over the pan. Commence to work the lice powder through the feathers down to the skin by beginning at the vent fluff and gradually work toward the head. The pan will catch the excess powder, which can be used again. Repeat this dusting every four days till all lice have disappeared. At the same time the hens are dusted, the house should be thoroughly sprayed with a 4 per cent dip. Before spraying, clean out all litter and either burn it or haul it out to the field.

### **The Group of Roup-like Diseases**

In the late summer, fall and winter, Leghorns as well as other breeds may be affected with one or more roup-like diseases. The first condition may be called chicken pox, contagious epithelioma, or sore head and is contagious. It appears as wart-like growths or sores of varying degrees. In its first stages it appears as a small pimple. The sores or wart-like growths appear on the face, comb, wattles, or at times on the skin of the head. The germ is a filterable virus and is too small to be seen by the microscope and too small to grow in visible quantities in the laboratory on culture media. Canker or avian diphtheria is also due to the same virus or germ. This may be called the skin type roup. The mouth type roup, called canker or avian diphtheria, appears as sores in the month on which are formed a cheesy exudate on the mucous membrane. This same condition may occur in the eye, causing the eye type roup. Colds, nasal

catarrh, and roup appear by a viscid discharge from one or both nostrils, which has a tendency to collect in the nasal sinuses where it undergoes rapid change into a cheesy mass, causing marked swelling of the face beneath the eyes. This condition may be due to a variety of causes. These diphtheria lesions or canker in the mouth, skin or eye, can be produced by intravenous or subcutaneous inoculations with a suspension of finely ground chickenpox virus derived from scabs removed from the tumors on the skin of diseased birds. Typical chickenpox lesions may be produced by inoculation of the comb with material from mucous lesions. A vaccine prepared from dessicated chickenpox scabs affords protection against canker as well as chickenpox. In outbreaks of chickenpox the number of affected fowls with canker of the mouth or eyes only may be as high as 60 per cent.

It is quite probable that the cause of the nasal type roup is a separate and distinct disease from sorehead, sore eye, and canker. The greatest proof that these diseases are distinct diseases is that a chicken recovering from sorehead is immune to sorehead again, but is not immune to nasal type roup. Again observations have been made in which birds have been observed to have recovered from roup but were not immune to sorehead. Again roup usually occurs where flocks are poorly cared for while canker, sorehead and sore eye may occur among the best cared for flocks.

When a bird is sick, remove it from the flock at once. The best practical poultrymen are never in too big a hurry after throwing the grain feed out to stop a minute and look over the flock and see if every bird is acting normal and eating. If a bird appears not right he catches that bird and examines it to determine what the trouble is.

Many times chicken-pox is present in a light form and with a little treatment it soon disappears. Essential oils with menthol rubbed on the comb, face and wattles will effect a cure in a very few days. This preparation which has given us such good results is impossible to obtain at the average drug store and I have tried many manufacturing chemists to ask them to prepare these pure drugs and place them on the market so the poultry people can get them just as we can get drugs for ourselves. At last I have succeeded in inducing the Zenner Products Company of Detroit, Mich., to get out this product as well as the sulpho-phenol tablets for the diarrhoeas affecting our birds. To this should be added a proper tonic. Often plain carbolized vaseline has given good results. In the eye type-roup the same treatment may be used but this condition is hard to treat and get satisfactory results. With the thumb and forefinger press open the eyelids and with a pledget of cotton remove the white pus-like clot and inject some of the medicine. Repeat this twice a day. For roup-like discharge from the nose, a hard rubber syringe can be used, forcing the liquid through the nose till it comes out the slit in the roof of the mouth. It is necessary to hold the bird with the head down so that the liquid can run out of the mouth. For canker of the mouth, some kind of caustic should be used. First scrape off the cheesy deposit. When there is any kind of a discharge from the nose it is best to use in the water some kind of an antiseptic. See that the house is warm, that the birds are not in a draft, and that the troughs are clean.

#### **The Group of Diarrhoeas of Fowls—Diarrhoeas of Baby Chicks**

There are many causes of white diarrhoea of baby chicks. All flocks in which diarrhoea occurs do not have white diarrhoea. The following are some of the causes of diarrhoea: Chilling, often fifteen minutes of severe chilling will cause diarrhoea in the course of a very few days. Catarrh of the mucosa of the bowel follows chilling as a catarrh of the mucosa of the head in people follows severe chilling. A few days ago I was asked to examine into the cause of diarrhoea in a flock of the baby

chicks. This flock was brooded with an electric hover. I placed the thermometer half way down under the hover and it only registered 75 degrees at midday. The probability is that at night or toward morning it would register about 15 degrees less or about 60 degree and no baby chick can live and keep its health in that temperature.

Another cause is overcrowding the hovers. Too many chicks are placed in a small hover and with the heat perhaps going down at night, the chicks crowd toward the warm zone which results in some walking over others. Those that are down become weak after a few hours. It may be the reverse, the warm metal surrounding the lamp may be too hot, the inner chicks are made weak by too much heat, and in the morning if the chicks have not been trampled to death under the hover, they are weak, and during the day are run over. Every cuff given a chick by a pal kicks him just that much closer to chick purgatory. These conditions must be prevented to attain success.

Again spoilt feed is a cause of heavy death toll among baby chicks—either spoilt mash such as that made from bitter, mouldy mill stuff or some wet feed allowed to lie around till it becomes sour and then the chicks eat it. These troubles come usually at between the tenth and fourteenth day. There are other causes such as "foul sick ground." It is necessary to get your chicks out on clean, pure ground on which there is grass or some other vegetation such as rape, oats or cow peas growing. Range on warm days is necessary.

White diarrhoea comes sooner in the chick's life. Usually the egg from which the chick is hatched is infected from a hen that is a chronic carrier and by the time the chick is three days old it shows signs of being sick. The way chicks are handled will do much to prevent diarrhoea, plus the supplying of the sulpho-phenol compound we have worked out and which we believe manufacturing chemists will soon be glad to put on the market so that the chicken people can get it. Do not take the chicks out of the incubator till the third day from the time the first chick is hatched. The first day give only soured milk and on the following day two small feeds of wet mash and on the third day three full feeds and milk, and if you are force feeding, after that time you can give five feeds a day plus milk to drink.

Sanitation is another thing that must be carefully carried out. Clean out under the hover each day. Scrub the water and milk fountains once a day. Scrub the feeding boards in a disinfectant after each meal.

### **Diarrhoea of Adult Birds**

As a rule, if we rear our baby chicks till they are four weeks old and then get them out on range we will have very little trouble rearing them to adult life. At least there is very little danger of diarrhoea among our range chicks.

Diarrhoea of the farm or back lot flocks is due to a variety of causes. Scraps from the table are profitable fed to the home flock and the chickens getting in these scraps a very well balanced ration will convert this waste into eggs, an edible product. But the scraps must be given to hens in a fresh state. If the scraps be allowed to become mouldy they will cause an irritation of the bowels and the birds become sick. These symptoms will vary according to conditions, but the hens will be off feed, have diarrhoea and it is not beyond possibility that some may die. Table scraps should not be dumped in an old stale, musty bucket containing decaying organic matter. The scraps should be fed to the birds the same day, and if convenient, at once unless it is the desire to keep them till evening and mix them with the hot mash. It is a common thing to feed the poultry flock anything about the kitchen that is spoilt and not fit for human consumption. Any food that is spoilt and is not fit for human consumption is not



fit for poultry consumption. Fowls are very susceptible to ptomaine poisoning and spoilt feeds easily cause diarrhoea as well as poison to the central nervous system, causing so-called limber neck and death of the birds. I was called many years ago to see a flock of twenty-one fowls that were dying with some mysterious disease. In fact, fourteen hens had died in less than sixteen hours. Upon investigation I found symptoms of limber neck and on further investigation I found that a can of spoilt corn was found among the canned fruit stored in the cellar for family purposes and the owner seeing that the corn was spoilt and not fit for table use, thought that it was good enough for the chickens, threw it out to them and they ravenously devoured it. Well, it was good enough for the chickens for it got away with over 60 per cent of them. Another illustration along this same line: A young cook made a mistake and used salt in making cake instead of sugar. Finding out her mistake she threw the cake out to the hens with the result that all died.

Another quite common cause for diarrhoea among the adult birds is stagnant water. The drinking cups and the troughs become foul and the birds drinking such water may develop diarrhoea as shown by the yellow-green liquid discharge from the bowels. Such troughs and cups will be found sleek on the inside. Drinking containers should be washed and disinfected with a 4 per cent dip once a week and washed each day, using either the hand or a brush to scrub the walls of the container. Clean, fresh water should be kept before the birds at all times. An assistant of mine last year made observations on range chickens as to how many times one of these birds would drink in an hour on a hot day. One chicken came to the water trough twelve times in one hour. To obtain the best results you cannot allow the drinking water troughs to be empty half of the time. Water must be kept before the birds at all times and it must be just as pure as for human consumption.

Mouldy grain and mill stuffs from which the mashes are made, if allowed at some time to become wet and mouldy, are injurious to fowls. Spoilt vegetables and other products will be injurious, all causing more or less bowel trouble.

As for treatment, it is always well to remove the sick birds, look for the cause and remove it. An intestinal antiseptic as indicated and other treatment similar as outlined under diarrhoea of baby chicks, will be effective. Remembering that drugs are only an aid in assisting the birds to recover, other sanitary precautions need be given.

In addition to these non-contagious diarrhoeas we find several of a contagious nature. That is, some germs cause disease in fowls accompanied by diarrhoea. Among these may be mentioned fowl cholera and fowl typhoid, both of which are very deadly. In these the symptoms are those of great weakness, staggering gait, liquid, sulphur or yellowish greenish colored droppings, the bird is very thirsty, rapidly becomes emaciated, sits on the perch pole in a ball appearance, and in a few days dies. The bird may die after showing illness only for a short time or the bird apparently healthy at night may be found dead under the perch pole the next morning. It is rare indeed to see one recover. A vaccine has been made from the germs of the disease, but has not met with as good results as we had hoped for. We have found the sulpho-phenol compound as modified in our laboratory, and which Zenner Products Company will soon manufacture for the poultry people, to give the very best results. In addition to medicine given in the water, it is necessary to thoroughly clean the premises, burn all litter, use a 4 per cent disinfectant spray in the house, move the well fowls to new quarters, plough up the old yard and cultivate in crops. After several months of such precautions one may again keep fowls on the premises but whether or not this can be done successfully will depend on how thoroughly the sanitary measures are carried out.

## Building a Modern Egg Farm

By WM. SHANDS, Little Blue, Mo.

**T**HIS is the question that is rolled over in the minds of thousands of persons every year as they realize the importance and the large possibilities of the poultry business as a money making proposition. If started right and conducted under sound business principles it is a proven fact that an egg farm can be run to better advantage and pay larger returns on the investment than almost any other line of farming.

In starting out, take into consideration first the amount of available cash you have to invest and plan the size of your plant accordingly so that you can get it built and stocked without going into debt. In selecting a site or location it's advisable if you are near a city to locate on a road with heavy automobile travel, which means retail sales, in other words selling direct to the consumer at about two cents a dozen more than the wholesale price as this is quite an item when you are getting from fifty to one hundred dozen eggs per day.

Select land if possible that is rolling and preferably to the south. This has a big advantage over flat or level ground in that with practically every rain it cleans your soil, thereby meaning clean, healthy birds. Also endeavor to have plenty of natural shade and by all means plenty of pure water for 1,000 or more hens drink lots of water when in heavy production and without plenty of water at all times it is impossible to get eggs.

Now that you have your location your next step is to consider buildings. My advice along those lines is to see what house is giving best results in your locality and adopt one similar. In a northern climate you need a warmer building than you naturally would in the south but wherever it is be sure of one thing—that you have plenty of ventilation, pure air and sunshine for that is the greatest insurance against disease you can use.

It is not necessary to build an expensive and elaborate house but it should be built durable and for the comfort of the birds without crowding. Here at White Hill Farm in Missouri we use the Woods Open Air House and the Missouri house, both of which give excellent results and they will work satisfactorily in most any climate. We have our north walls so arranged that during the summer they can be removed meaning virtually nothing but a roof over the birds in warm weather but in early fall they are put back in place and sealed up tight. This gives a house cool in summer and warm in winter which means large egg production. We use a house holding 1,000 layers and while it works satisfactorily we are frank to admit that we get better results in our houses where we run 125 to 250 head to the house and recommend flocks of that size for best results.

In building your houses arrange everything such as nests, mash hoppers, feed bins, water systems, etc., in the most convenient way to cut down labor. In wiring for electric lights arrange so they can be operated from your bedroom. Also piping water into each house will save many steps and many dollars in labor during the course of a year or so.

After your factory is built you are now ready to install the machinery—namely, the hen which is nothing more than an egg machine being capable of doing more than a certain amount of work under favorable conditions. As to the breed or variety you wish to use that is something left entirely to your fancy but for a modern egg farm we would use the Leghorns as it has been proven that she will produce more eggs at less cost per dozen than any other variety. The mere fact that practically

all the large egg farms use the Single Comb White Leghorn is the best evidence that she is the best bird for this particular purpose. In fact to use the heavy breeds on a large egg farm is just about as practical as it would be to enter a draft horse in the "Kentucky Derby" against the purebred racers.

In laying in your foundation stock you can buy eggs to hatch, day-old chicks, ten-week-old pullets, or matured stock, either way of which is satisfactory provided you get good Standardbred stock that is properly bred for good average flock production.

Take a "tip" from one that has gone through the mill so to speak and don't fall for the cheapest birds you can buy from some advertised "300-egg utility line" and expect to get results, because you will be disappointed. When your houses are completed go to some reliable breeder that is making a success, one who has good Standardbred stock and claims a reasonable egg production, one who has a flock of healthy, vigorous birds, tell him what you want, pay a reasonable price and your success is assured if you have the proper buildings, see that your layers are properly fed a good, pure balanced ration, with plenty of water, grit, shell, etc., and, last but not least, that your houses are kept clean and sanitary at all times with plenty of pure air and sunshine.



## Mating Rose Comb White Leghorns

By MRS. GEORGE A. RIGLER, Bentonsport, Iowa

**I**N MATING Rose Comb White Leghorns it is best to have your matings small and full of quality. Mate four hens and one cockerel that are as near uniform in type as possible. You can expect much better results from such size matings than from twelve to twenty hens to one male. We always want the best type of birds, and as near Standard weight as we can select, to breed from. We consider that you must have good Leghorn type first, Standard size second, good white color third, and, if you have good type, your birds will have good shape.

In selecting the male bird for your breeding pen, cock or cockerel, we prefer mating the cock bird to well-matured pullets and the cockerel to yearling or two-year-old hens. We consider the cockerel-hen mating the best for strong, vigorous chicks and strong fertility of the eggs.

In picking the cock or cockerel to head your pen, always pick the male bird having strong points where your females are weak, and the same way in selecting your females. Select them strong in the points where your male bird is weak, and you will improve your flock from year to year.

The male bird must be of the best Leghorn type that you have or can buy, not a pound too light or too heavy. He must have a well-shaped comb, free from hollow center, which must not stand too high on head or obstruct the eyesight. It must not be too thin at the base of the comb. He must have a well shaped spike, that does not follow the neck, and not a beefy comb. Have your rose comb on male as firm and well-shaped as you can get it, nice white lobe, red eyes, extra long, well-curved, broad back, with heavy saddle that meets the tail without much of a break—none at all is better.

An extra large well-spread tail with lots of beautiful covert feathers to cover the sides of the tail is important. Have the male stand extra well up on legs that are nice and yellow and free from stubs and down between the toes, and be sure your male is free from brass in color of plumage and has not too much yellow in undercolor of plumage. The whiter the plumage the better your bird.

The females must be of the best type you can select. They must have well-shaped combs that are not too loose at the base, permitting combs to fall to one side of the head. We do not like too small a comb for if the comb is too small you have a poor layer.

A good female should have nice white lobes of good size, red eye, and a long, concave back, with extra heavy cushion at tail. Her tail should be extra well-shaped and carried low. Good, long, deep bodies show high egg production. She should be well up on legs that are nice and yellow, and free from down and stubs on legs and between toes. Pure white in all sections and free from brass is highly desirable.

We have bred Rose Comb White Leghorns for the past twenty-two years and have found no better layers nor more beautiful birds than the Rose Comb White Leghorns when properly bred. We would rather part with any other stock on the farm than our flock of Rose Comb White Leghorns. It doesn't take much feed for them and they surely fill the egg basket and pay a handsome profit.

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## How, When and Where to Advertise

By H. V. TORMOHLEN, Portland, Ind.

**T**HE whole structure of the thoroughbred poultry business is built around advertising. If you have a good strain or variety of fowls it is your duty to let the world know about it. A sign painted on your poultry house or an ad placed in your local paper is not sufficient. Poultrymen would quickly starve to death if they depended upon this means of advertising. Nor is it enough to win some prizes at the shows and expect to get a lot of free advertising because the poultry papers print the winnings. To expect to profit thus is to be of the consistency of a leech. The poultry business is a billion dollar, world-wide business and you must get this vision and advertise to the whole world, for you can ship stock or eggs anywhere.

Where shall I advertise? The location of the publication has little to do with it—the character and size of its subscription list a great deal. You generally get just what you pay for and the publishers who charge more generally have larger circulations, though not always. The make-up, style and a general business policy of one paper may instill more confidence in its readers for its advertisers than another and thus of two papers with equal circulation, one will pull far better than another. A safe rule to follow is to fish where the other fellows find fishing good. It may take you a long time to appreciate this and you may waste money on advertising in papers just because no other breeder of your variety advertises there. You may win—once in a while.

When shall I advertise? It is throwing money away to advertise a month or two, but after the second or third month you should be able to tell whether you have the right kind of bait in your ads. The successful advertiser changes his copy every month in the year and advertises every month in the year. Follow this rule and write your ad as if you were writing a telegram—boil it down and re-write it a dozen times until you say just what you want to say. Then talk about the other fellow's needs and not your wants.

A good ad carefully worded and placed in the right publication, is one of the best investments in the world. Advertising should be considered a privilege, not an evil necessity. The American poultier can never repay the debt he owes to the progressive poultry publications in this country

that have made the industry what it is. Read a few foreign publications and you will appreciate what I mean.

Do not knock the poultry papers because they do not see fit to tell their readers all about your fine birds or winnings when you do not advertise with them. If you show for the sport and have nothing to sell then you do not want publicity which will pester you with inquiries. If you have something to sell, then be honest and advertise and quit knocking the papers for not giving you a few dollars' worth of space gratis.

Leghorn breeders as a class have been poor advertisers. Get in the game, the fishing is fine! The demand far exceeds the supply but the demand is in yonder states and provinces and you must advertise accordingly. A good rule to follow: Spend half of what your feed costs each month in advertising. That rule will work wonders.

Our members are acquainted with the poultry papers. To get a line on the best farm papers write the Agricultural Publishing Association, 76 W. Monroe, Chicago, for their booklet which lists all best farm papers, gives rates, circulation, etc.



## Feeding Laying Hens

By PROF. A. G. PHILLIPS. Purdue University, Lafayette, Ind.

**P**OULTRY profits depend upon successful egg production, and this is influenced as much by feeding as any other one thing. To get the most satisfactory ration and work out the method of feeding is a problem for many people. The standard laying ration used and recommended by Purdue University is as follows: Grain—Ten pounds corn, ten pounds wheat, five pounds oats, twenty-five pounds total.

Mash—Five pounds bran, five pounds shorts, three and one-half pounds meat scraps, thirteen and one-half pounds total.

Grit, oyster shell, ground dry bone and water available at all times. This ration is often changed which can easily be done without harmful results.

Example No. 1—when wheat is high in price, change the grain to eighteen pounds corn and seven pounds oats.

Example No. 2—When barley is available, substitute it for half wheat or in example No. 1 for half the oats.

Example No. 3—When tankage or skim milk is available, substitute three pounds of tankage or fifty pounds of skim milk for the three and one-half pounds of meat scraps.

Example No. 4—When bran and shorts are not available on the market, substitute ten pounds of wheat mixed feed for the five pounds of bran and five pounds of shorts, or use five pounds hominy feed or corn meal feed, three pounds ground oats and five pounds of meat scraps for the entire mash.

Example No. 5—When one desires to use corn meal, corn meal feed or hominy feed in the mash as mixed above, an equal amount of corn should be deducted from the grain mixture. This will naturally increase the proportion of mash to grain. Thus, if five pounds of cornmeal were added to the mash, making the total mash as eighteen and one-half pounds, five pounds of corn should be taken from the grain mixture, making it twenty pounds.

### Method of Feeding

The first rule to follow in feeding any of the above rations is to feed it in the same proportions as it is mixed. It will be noted that there are twenty-five pounds of grain and thirteen and one-half pounds of mash

in the Purdue ration, or, roughly speaking, two pounds of grain to one of mash. As a rule this should be fed two to one, and the feeding methods so controlled that it will be consumed in this proportion. It may be wise to weigh out one week's supply of grain and mash, figuring twenty-five pounds of total feed as the amount 100 hens will eat in a day, and see if the birds consume the mash in the same length of time as they do the grain. If they do not the feeding method is faulty.

A bird should be allowed to consume practically all it desires of the right feed, for high egg production depends on heavy feed consumption. The measure of a good poultry feeder is determined by his ability to so feed his birds that he can stimulate their appetites, and make them consume a large amount of feed, without cloying the appetite and throwing the bird off feed. This of course presupposes that the bird controls its appetite and the feeder controls the feed mixture.

A bird's appetite varies, influenced by weather, health, condition, etc., and the feeder must watch this to prevent over or under feeding. It must be remembered that a fowl eats more when she is laying heavily than when laying poorly. No general rule can be made to meet the variations and the poultryman must watch his birds and feed accordingly. First, mix the ration; second, feed it as it is mixed; third, change it to suit conditions.

Grains are the most palatable part of the ration and mash the least palatable. Thus the method of feeding the grain will control the amount of mash consumption. Grain must be fed in the litter to compel exercise, and the deeper the litter the better. Grain should never be fed on the bare ground. If too much grain is fed in the early morning, the appetites of the birds will be appeased and very little mash will be consumed. This being an undesirable thing, it is best to feed grain sparingly in the morning, so that the birds will be hungry enough to eat mash throughout the day. Since birds digest food at night as well as during the day, the evening grain feed should be a heavy one, insuring a full crop when the birds retire. If one hundred birds consume twenty-five pounds of feed in one day they would need about nine pounds of mash and sixteen pounds of grain. Since it is best to feed about one-third of the grain in the morning this would mean five pounds of grain in the morning and eleven pounds of grain at night. This is of course figuring theoretically, for in actual practice many things may change this somewhat.

Mash in the Purdue ration is none too palatable, and the birds must be made to eat it. It is so mixed because it is cheap and economical. Mash is fed dry and kept in an open hopper in front of the birds throughout the day. Birds usually eat and then take a drink of water. Wetting the mash increases the palatability but compels heavy consumption at one time, which is not considered desirable. Unless the birds fail to eat it dry, wetting the mash will not bring returns sufficient to pay for labor and trouble involved. Adding any animal protein or corn meal will increase the palatability, but birds will always eat more freely when in heavy laying condition.

Grit, oyster shell and bone are kept in open hoppers, making them available for the fowls at all times. Birds usually do not overeat these minerals.

Succulent or green feed is usually fed at noon in the winter time, and the amount is controlled by the bird's appetite. Sprouted oats are generally thrown into the litter or on the feed platform and beets are hung on nails on the walls.

Water if possible should be fed as running water in a trough with a slatted covering to prevent the hens from soiling it. When this is not possible, a bucket placed on a slatted platform will be easy to keep clean.

available and easy to carry. Where milk is fed in place of water, buckets or troughs are used.

All feeding hoppers and drinking vessels are kept up off the floor to allow free use of the floor space for scratching and to keep litter out of the feed and water.

### Changes in Feeding Methods

When pullets are brought in from the summer range to the laying house where they are to be fed for the winter, they should be plump and in good flesh. The cold weather of winter increases the demand on the bird's digestive system and their reserve fat, because the body must be kept warm. If eggs are expected, this demand must be met by replenishing the reserve which the pullets had in the fall and at the same time give enough more for eggs. This can be done in two ways. Increasing the proportion of grain from two to one to three to one will furnish more heat units per pound of feed consumed. However, the days of winter are short, and between 7:30 a. m. and 4:00 p. m. there are fewer hours for eating and more hours left for sleeping. This keeps consumption of feed at a low ebb. Since egg production depends on the amount of feed eaten it is highly desirable to find some scheme of management which will cause more feed, particularly the grain, to be consumed.

### Artificial Lights

If at 8:00 p. m. the birds could have a good feed of grain they ought to keep in better shape physically and lay more eggs. To do this, artificial lighting is practiced from 8:00 to 8:30 or 9:00 p. m. Ordinarily in winter the birds receive the evening feed at 3:00 or 3:30 p. m. After dark a trough of grain is put in the house and at 8:00 p. m. the electric or other lights are turned on. The birds come off the roosts immediately, fill up on grain and some mash, and return to the roosts in about thirty minutes. The lights are then turned off. This accomplishes the result similar to what would be obtained if the house were lighted from 5:00 to 8:00 p. m. The same results may be accomplished by feeding at 3:00 or 4:00 p. m. The main object is to get more feed into the birds. Electric lighting is not a housing problem nor an endeavor to fool the hens. It is a part of feeding practice.

Egg production usually is increased as the season progresses, and on January 1 the mash may be increased and the proportions of grain to mash be slowly brought back to two to one by March 1. This proportion is maintained until about July 1, when birds may become run down, less efficient in their use of feed and easily fattened on too much grain. Hence the mash is gradually increased until by September 1 the proportions of grain to mash are about one to one. This holds up egg production in the hot summer and early fall, when most birds cease laying.

Any change of feed due to changes in the weather is permissible. If the winter is especially cold, the grain might consist largely of corn. As a rule, when milk is the chief source of protein no water is given but on real warm days the birds will need more liquid and water may be supplied.

### General Farm Conditions

The farmer who keeps hens partly as scavengers in order that waste products might be turned into a finished product has an entirely different feeding problem from the man who gives all his feed by hand and absolutely controls the ration proportions. If any birds are to be shut up in winter it should be the pullets and the breeding hens should be allowed free range. Egg production can be obtained when birds are in confinement, but fertility is injured. In the fall when birds like to run to corn cribs and corn fields, or in summer when straw and silage waste are

attractive it is economically necessary that the waste be conserved. If, however, the birds run to these sources of grain supply the first thing in the morning they will soon become satisfied, become inactive and eat no mash. Few eggs is the result. To overcome this, the fowls should be kept shut up until about 10:00 a. m., a very light feed of grain given and a heavy mash consumption assured. The birds can then be turned loose to finish the day on waste feed. This practice will also cause more eggs to be laid in the henhouses and fewer in hidden spots.

In the summer the mash must continue to be fed in hoppers and the grain fed by hand. Hens cannot get from nature enough feed of the right kind to keep in producing condition. It is folly to neglect feeding the hens in summer.

In the spring when the ground is being plowed and young green shoots are palatable, the mash requirements may be reduced. At butchering time the meat scraps may be eliminated. However, any such changes must be made with wisdom and the efficiency of the feeder will be measured by the judgment he uses.

A hen's daily habits can be very largely controlled by the methods of feeding. Where a hen is fed, there she is most apt to roost and lay. If a hen is starved she will steal. If her needs are supplied, she can be kept inside of a four-foot fence and will stay out of the garden. If she is compelled to hunt for a living, hunt she will, and neither fences nor people can keep her out of places where feed may be obtained. It is more desirable to fence hens out than to fence them in.

The breed to be fed will influence the method of feeding more than it will the ration. The same ration may be fed to different breeds, but the method of feeding it may have to be changed. Plymouth Rocks will fatten more easily than Rhode Island Reds and the latter more easily than the Leghorns. This is largely because the more active the breed the more grain it can handle without becoming overfat. Also it has been noticed that at times the Plymouth Rocks will eat more mash than they should because it requires little work or effort.

Some people make a difference in the ration for breeders as compared with layers. In reality little difference is made in feeding, but there is a difference in results. Hens should be used as breeders and pullets never. Hens do not usually lay after November 1, nor begin to lay heavily before February 1. Between November and February they rest, grow new feathers and get in prime condition for a spring lay of fertile eggs. At the close of the laying season if they laid heavily they are usually thin and need to build up flesh and reserve fat for winter use. Thus the hens are put on a ration of three parts to one of mash from about November 1 to January 1. The poultry houses are not electric lighted until possibly January 1 to 15. This means that pullets and hens are fed very similarly.

Hens do not lay as heavily as pullets, are not as active, fatten easier and hence do not eat as much feed in a year. They have to be carefully watched that they do not break down from over-fatness. This is particularly true with Plymouth Rocks and Wyandottes.

The condition of the birds and the result being obtained are the best criteria for the correctness of ration and method of feeding and management. If a bird goes off feed, something was wrong with the ration or the method of feeding. Occasional examination of birds upon the roosts will inform the poultryman as to whether he has fed enough at night and whether the birds are in good flesh. If birds are thin more grain should be fed. If the birds show looseness of bowels possibly too much protein is being fed. If the birds are laying over 50 per cent when on artificial lights in November or December, they are overdoing and may quit laying for a while in the spring and go through a partial molt. This is the fault



of the feeder. If the birds show a tendency to lay too heavily a reduction in mash or total feed will soon reduce the production. If any change of any kind is made it must be made gradually, as sudden or marked changes, particularly in fall and winter, when it is not natural for hens to lay, will check production, to be followed by a molt and long or short vacation.

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## Care and Conditioning of Males for the Showroom

By F. D. ROGERS, Elgin, Ill.

**N**OTWITHSTANDING the fact that poultry shows and exhibitions have been held throughout the country for many years, according to my judgment, the number of people whom I would call real conditioners and fitters may be counted almost on the fingers of one hand. This is absolute proof that the proper conditioning of white birds for the showroom is really an art. Scores of exhibitors make the attempt each year, as a rule with little or no success.

Like many other phases of the poultry business it is very hard indeed, in any article to give every small detail, therefore the suggestions I have to make are simply given as a basis or guide to work from. Earnest and conscientious practice and nothing else will give you the desired results.

First of all I desire to emphasize most emphatically the great importance of proper conditioning in regard to white birds intended for exhibition. I have remarked many times it is fifty per cent of the game, so to speak, yet the average beginner or amateur will not take you seriously in this regard. The hundreds of very poorly conditioned specimens found annually in practically every show in the country proves the above statement to be very true indeed.

First of all you have to have a real chicken to work with; by that I mean a specimen that has been properly bred, having bone, size, substance, quality of feather and vigor. It is positively useless and out of the question to accomplish real results with a bird that is weak, puny, and poorly bred. That is thought number one and should be given your earnest consideration.

Furthermore do not wait until about a week before your show date before you think of getting the birds ready. Start the day they are hatched, or better still when mating the pens of the parent stock. They should be grown and reared from the very beginning. About the time the young cockerels grow their adult plumage select the choicest and best specimens, coop and care for them in a specially made individual coop with a covered wire run ten or twelve feet long attached to same. This affords ample exercise and gives you the assurance that they will properly finish, acquiring no broken feathers, torn wattles, or anything of that nature.

These coops and runs are kept in at least partial shade, the birds receiving the best care, feed and attention. About a week or ten days before the show dates, start to train and accustom them to the exhibition coops, placing them in the coops at intervals, handling them more or less. The first few days of this process it is advisable to work evenings under light. With artificial light a bird is apparently not as afraid or nervous as in daylight. The room where the training takes place should be comparatively cool; a warm room has a bad effect on the birds, with a tendency to grow the combs of the males. Two days before shipping to the showroom the actual washing takes place.

The wash tubs are placed at a convenient height, not to cause any more backache than is necessary. Use only clean soft water. The first tub or suds should be filled a little more than two-thirds full and the water should be lukewarm so your hands can be nicely held in same. I recommend and use exclusively Sayman's Vegetable Soap. One bar is shaved and melted to liquid form, and this is poured directly into the first tub. Another whole bar of the soap is used to rub on the surface of the specimen to be washed. Take the bird in the left hand, gradually lowering him in the water, covering him with the suds until all but the head is submerged. Hold him in this position for at least five minutes, allowing the water and suds to thoroughly soak the plumage. You then just naturally wash the bird in all sections until he is clean, starting with the neck or hackle. Do not slight this part of the program but do it thoroughly in the quickest possible time.

The second tub is the rinse. The water in this tub should be slightly cooler than the suds. The rinse is all important, and great care and precaution should be taken to see that every trace of soap is completely rinsed from the plumage in all sections. This is where many beginners fail, they do not thoroughly rinse the soap from the plumage. Take particular pains with the sickle and tail feathers, they are the hardest to thoroughly rinse.

The third tub is of cold water slightly blued; use only the very best grade of bluing and a small amount. Many seem to think they are to dye the bird, but such is not the case. Use about as much bluing as is used by the housewife for the family washing. Dip and thoroughly rinse the bird in this tub and he is then ready for the drying coop. Do not squeeze the plumage in any way after the bird is taken from the third and last tub, simply let the water drip from the plumage. Then place the specimen in a coop that has been previously cleaned and dusted, the bottom covered with clean shavings. Place in a temperature of about ninety degrees. Always dry male birds on a perch, so placed in the coop that the tail plumage does not touch the back to become bent or broken. Good judgment and common sense must be used, for as the bird gradually dries he must be removed farther from the heat. Dry steadily, not too fast. Drying too fast has a tendency to curl the feathers. The legs and toes should be cleaned and washed with a hand brush while the bird is in the tub. When damp and moist the dirt under the scales should be removed with a small hard wood toothpick, care being taken not to cause the blood to start. Clean the nostrils in the same manner, sponge the face, comb, and wattles with alcohol or brandy.

When shipping to the showroom use light yet substantial coops. Take every care and precaution that they are absolutely clean in every respect. Upon arrival at the showroom arrange if possible to coop your birds and before doing so thoroughly clean the coops in which you are to place them, provide feed, water, and grit. After they are properly placed in the coops and are in good condition do not handle or fuss with them, as the perspiration from the hand has a tendency to soil the plumage. Moreover, there is a danger of the birds becoming tired or overtrained.

They are now ready for the judge to pass on and make the awards. Above all things, regardless of the results, be a real sport and take what is awarded you. Do not become what is known as a chronic kicker. Mingle and mix with the old and seasoned exhibitors, cultivate their acquaintance and learn from these men who have had years of actual experience. When the excitement and judging is over if there are conditions and circumstances that you do not understand, ask the judge in the right spirit for the information that you are seeking; ninety-nine times out of a hundred he will satisfy you in every way. Moreover while in the showroom above all things do not make that remark so often heard "that you have better

birds than the winners at home." Do not leave the best at home; the showroom is the place to have your best ones.

If one will follow these suggestions in the main, adding any ideas of their own that may be practical and to the point, success eventually will reward your efforts.



## Vaccination of Poultry—What It Is and What It Does

Chicken-pox has become the poultry scourge the past two or three years in the northern states where it was seldom before known. Colds, Roup, Canker, often Diphtheria, quickly follow. The loss has been tremendous. These diseases can be more easily combated, however, than the San Jose scale in your orchard, hog cholera among your hogs, tuberculosis among your dairy cows, foul brood among your bees, through the simple vaccination of your fowls with the proper bacterin.—Editor.

By DR. SIMON E. PETERSON

**B**EFORE roup and chicken-pox broke out in Klepper's Hennery, Limestone, Tenn., last fall, Mr. Klepper's 300 pullets were laying 100 eggs per day. The flock became so badly infested that within a few days the egg yield dropped to 24 per day. The situation was alarming. A loss of six dozen eggs per day, when prices are high, soon cuts down a whole season's profit. The question naturally arose, "Is it not possible to stop such losses by preventing the disease?"

It is possible not only to prevent roup, chicken-pox, cholera, and associated secondary infections but also to cure a big percentage of birds already infected. Vaccination is the answer to the question.

Vaccination solved the problem for Mr. F. B. Rhodes, manager of Willomine Farm, Hillsboro, Ohio. Mr. Rhoades vaccinated all the breeding stock on Willomine Farm last autumn and did not have a single case of roup, diphtheria, or cholera all winter. In addition, his eggs hatched better last spring than ever before, giving stronger, healthier chicks. Now Mr. Rhoades says that they cannot afford to raise poultry without vaccinating them. Incidentally, Willomine Farm now advertises for sale immunized stock only.

Mr. J. M. Roelke of Teegarden, Ind., had 150 birds affected with roup. Fowls were dying every day. The usual treatment seemed to do no good. Making a purchase of avian (fowl) bacterin, Mr. Roelke was uncertain just what the outcome would be, as he had never vaccinated before. To his great surprise, the bacterin worked wonders, as it saved the entire flock with the exception of a few of the very worst ones for which there was no possible hope of recovery.

Chicken-pox, roup, fowl diphtheria and cholera are perhaps the greatest sources of loss to the poultry industry today.

According to Friedberger, the noted German authority, the mortality in chicken-pox and fowl diphtheria is 50 to 70 per cent. Where the infection is less severe and the mortality not so high, the total money loss may be even greater than when many birds die. If the disease is not properly treated in the beginning and convalescence is slow, the egg loss and the reduced vitality which makes the birds poor breeders are often greater than the value of the bird itself.

The mortality in cholera is often as high as 90 to 95 per cent. It frequently runs a very rapid course when death may result in 24 to 48 hours. Fowl cholera has been recently included among the diseases requiring offi-

cial notification in Germany, Austria and Hungary. Upon the appearance of the disease, the infected premises, localities, or, when the disease is very virulent and widespread, even entire townships are quarantined against traffic in fowls. Early treatment is always advised; it decreases mortality considerably.

### What is Vaccination?

Vaccination is a simple, safe, scientific method of preventing and treating disease. During the Spanish-American War, before vaccination was generally established, one soldier out of every five contracted typhoid fever and one in every fifty died from the scourge. In the World War, because the soldiers were vaccinated on entering camp, only one man in each two hundred contracted the disease, and only one in each two thousand died of it. Vaccination was responsible for this low death rate.

Vaccination is the answer to the poultry problem as well. Investigation has shown that fowl cholera, roup, canker, sore head, chicken-pox, diphtheria, and other similar diseases can be controlled by this method. Practical experience has proven that vaccination has reduced losses from these diseases to a minimum. The more the poultry public becomes familiar with this scientific treatment the more will it be possible to reduce the terrific annual loss from preventable diseases.

Vaccination is not new. Pasteur, the great French scientist and originator of the Pasteur treatment for rabies or hydrophobia, practised vaccination for fowl cholera in 1880. Manteufel, another French scientist, succeeded in vaccinating chickens against chicken-pox and diphtheria. The fowls were made immune to subsequent infections for over a year.

In order to better understand the theory as well as the practice of vaccination, that is, just what vaccination is, and what must take place in the body of the fowl that has been vaccinated to produce immunity to disease or to affect recovery, it is well right here to define certain medical terms. Knowing the definition of these terms will make the remainder of this article clear and more easily understood.

**Vaccination** is the injection into the animal body—human beings, as well as fowls, are animals, biologically speaking—of bacteria or their products in such a way that immunity to disease is established. **Bacteria** or **bacterial organisms** are disease germs. Their products are poisonous albumins called **toxins**. **Immunity** is that condition in which an individual or a species of animals exhibits unusual or complete resistance to an infection.

A **bacterin** consists of dead organisms suspended in normal salt solution; and when introduced into the body produces immunity by the formation of **antibodies**. An **antibody** is a substance present in the blood streams which is capable of destroying or neutralizing bacteria or their toxins.

### One Strain and Many Strain Bacterins

Experience has shown that the injection of bacterins has produced immunity to specific diseases when properly administered. It is a scientific fact, beyond dispute, that certain diseases are caused by specific organisms. Other diseases, complications of a primary infection, may be caused by a variety of bacteria. Such diseases are usually called **mixed infections**. It is clear, then, that vaccination against one strain does not always protect against another. Bacterins are, therefore, prepared containing bacteria of many races or strains, and isolated from as many sources as possible. A bacterin containing only one strain is called **univalent**; a bacterin containing many strains is called **polyvalent** or **mixed**.

This leads up to the vaccination of poultry. Which is the right bacterin to use, and why? It is obvious from our knowledge of colds, roup, chicken-pox, catarrh, cholera and associated diseases, all germ infections, that no single organism can be the cause. A few fowls may contract a

cold; in a short time the entire flock may show symptoms of roup; then canker and diphtheria may set in. Chicken-pox may be the primary disease; it may be complicated with roup. Cholera may or may not appear alone. Can these complications be caused by a single germ. No!

We have learned that a **univalent** bacterin does not protect against another strain or a mixed infection. Consequently to protect a poultry flock from the various diseases and complications which have been mentioned, only a bacterin made from many races or strains, isolated from as many sources as possible, will afford protection: a **polyvalent** or **mixed bacterin**.

When should a flock be vaccinated? Is it difficult for the layman to vaccinate? How long will vaccination produce immunity? Will vaccination cure all poultry diseases? Will vaccination introduce disease into a flock? Is vaccination expensive? How shall the poultryman know he is buying the right kind of bacterin?

The proper time to vaccinate is in the fall, winter, and early spring, or, for that matter, any time. Better late than never, if protection is wanted. If vaccination is done before the flock becomes diseased the owner may be reasonably sure that his birds will remain free from infection; they should be protected up to a year. Three doses, three to five days apart are recommended as a full treatment. Because of conditions encountered on the show circuit, an extra dose should be given a week or ten days prior to shipment. If disease is already in the flock, vaccination may or may not save all the birds. That depends upon how far the disease has advanced, and how many complications are present. It will, however, save a big percentage of them. Vaccination will not cure all poultry diseases. Avian (fowl) tuberculosis is incurable. Gapes, intestinal worms, lice, mites and other diseases for which vaccination is not intended, cannot be cured by this treatment.

Vaccination is simple and easy. Reliable manufacturers' directions are so plain that anybody with ordinary intelligence can, with one assistant and a little practice, vaccinate from 100 to 200 or more fowls an hour. The cost is only a few cents per bird; and the extra eggs laid and the better health of a vaccinated bird soon pay for that. We have learned that a bacterin contains only dead organisms, consequently when properly prepared, avian (fowl) bacterin is non-poisonous and absolutely harmless and its use positively cannot introduce disease into a flock. We have also learned that a single strain bacterin will not protect against a mixed infection. Therefore, the proper bacterin to use is one made from many strains, or a mixed bacterin. To be certain that, when buying bacterins, you get the right product, insist upon only those which are manufactured under Veterinary License, issued by the U. S. Department of Agriculture.

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## Value of Specialty Club Membership

By A. F. ROLF, Detroit, Mich.

**W**HAT is a specialty club? It is hard to answer this question in the abstract to the complete satisfaction of the average breeder whose membership has been solicited for the club which is devoting its efforts to his particular variety. But, given a specific club to talk about, it becomes easier. I shall, therefore, confine myself to the National S. C. White Leghorn Club in this discussion.

The National S. C. White Leghorn Club was organized in 1903, and for many years it prospered along the routine lines of effort expended by specialty clubs of that day. A series of unfortunate occurrences culmin-

ated in its ceasing activity during the Great World War, and it lay dormant until September, 1920. At that time it was reorganized under the administration of M. L. Chapman of New Jersey as president, the writer as secretary-treasurer, and an able body of interested breeders filling the other offices. Realizing that the methods formerly followed by specialty clubs had not resulted in the greatest possible efficiency, the officers determined upon a policy which would be much broader in scope than previous efforts, and upon departure from the "beaten paths" of most specialty clubs.

The first great problem was to develop a membership of sufficient size, and from all sections, to make the club representative of the variety, and give its voice a power which would command the necessary respect in every quarter. Practically every penny of revenue derived from memberships the first year was expended in soliciting new members. At the same time, earnest effort was made to keep out any undesirable characters from its membership. We were very successful in this direction, and a membership of more than 700 was developed within a year. It was necessary to take action expelling two of these members for improper actions, in order to protect the value of membership in the club, but this is a very small percentage and speaks highly for the character of our breeders.

By this time the club was in a position to undertake some really constructive work. It is now engaged in such projects as preparation and distribution of publicity materials setting forth the advantages of Standardbred White Leghorns as profit producers, thus increasing the demand for the variety and consequently improving the business of its members. True, non-members also benefit by this action, but as they see the value of this sort of work they are generally glad to contribute their bit (\$2.00 per year) in this work. Special prize ribbons and cups have been offered, for competition of members, at more than 500 shows each year. This pulls a greater exhibit of White Leghorns at the shows, and as numbers influence public opinion, this has tended to develop a greater demand for stock and eggs by beginners.

Probably the biggest work done by this club—and it is frequently stated, by competent authorities, the greatest work ever accomplished by any specialty club—has been in the matter of insuring the most efficient Standard possible for the variety in the current revision of the American Standard of Perfection. The small \$2.00 membership of our club members made possible the gathering and compilation of the ideas and desires of several thousand breeders, as regards the Standard revision. The new Standard for White Leghorns, recently approved and accepted by the American Poultry Association, requires that the Standard bird be one which includes every known factor which is correlated to efficiency of production. It requires that the Standard Leghorn have capacity, breadth, vigor, frame, depth of body, freedom from coarseness, in short all of the points which indicate high production; in addition, it insures these points without sacrificing any of the desired Standard refinement, uniformity or beauty of our favorites. Weights have been kept as formerly, but by providing for the disqualification of all females falling more than one-half pound below Standard weights, and all males more than one pound below, it once and for all eliminates the weak, delicate, "peewee" Leghorn from the horizon.

Plans are almost complete for offering of worth-while specials at egg-laying competitions to encourage breeding for more efficient production.

Competent committees are formulating plans to combat the unjust discrimination which certain buying interests are now applying to Leghorns, and this will be one of the major projects for the future until this aim is an actuality. Already, much progress has been made in this direc-

tion, by meeting, through publicity, the false claims and statements put out by these interests, and causing the cessation of some of their most offensive measures.

A large number of breeders have modified their sales literature, eliminating exaggerated and misleading statements from their advertising, as a result of club activity. "Truth in Advertising" will do much to retain the confidence of the world in our variety, and that is one of the major aims of the club.

We have provided a service bureau for our members, finding information desired, and adjudicating claims by, or against, our members in various business dealings.

We might continue to enumerate, and elaborate upon, many of the benefits from club membership, but will rest our case, in that direction, upon the following suggested reasons why you should affiliate yourself with this progressive club:

(1) The club stands for a square deal for White Leghorns and White Leghorn breeders;

(2) The club caters to the interests of the smaller breeders; if they succeed, the larger breeders will do likewise;

(3) The club is conducting a campaign which cannot fail to advance the White Leghorns, thus working to your direct financial benefit;

(4) Organized effort is necessary to prevent the best variety of chicken—the White Leghorn—from being displaced by propaganda boosting less desirable breeds;

(5) The club breed book, containing most modern and complete guide to mating and breeding White Leghorns for every purpose, circulates among thousands of beginners and prospective buyers. Your name in membership directory means a vast amount of advertising;

(6) Every member gets our official organ, *The Leghorn World*. You can't keep properly posted without it;

(7) Members only are eligible to compete for special prizes offered at all poultry shows;

(8) Affiliation with the club and use of its emblem gives you prestige among the best breeders;

(9) Team work counts. Show your faith in White Leghorns by being publicly identified with the club which has as its chief object the advancement of your variety;

(10) We will not countenance undesirable characters as members. We will exert every effort to make membership in this club emblematic of reliability.

In short, then, the National S. C. White Leghorn Club is an organization, supported by the small membership dues of \$2.00 each, per year, of those far-sighted breeders who appreciate the truth of the statement: "United we stand; divided we're stuck." The united action of the breeders makes possible the accomplishment of vast benefits which cannot possibly accrue through individual effort.

Elbert Hubbard once said: "Men are valuable just in proportion as they are willing to work with other men."

If you are one who appreciates this sentiment, then membership in your specialty club will be of untold value to you, through your assistance in making possible the steadily driving effort to make sure that White Leghorns are kept before the public in their true character, and will get your direct returns from the improved demand for birds of highest quality.

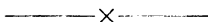
This club, already comprising more than 1,500 active breeders of White Leghorns, will welcome your affiliation with it, and your support in its campaigns to put the White Leghorn on its zenith of popularity and true worth.

## Building a Winter Egg Strain

By W. H. SANDERS, Wheatridge, Colo.

**A**BOUT fifteen years ago I started to give particular attention to breeding for winter eggs. It is not natural for a hen to lay in the winter time any more than it is for the crow or any other of the wild birds. The natural time for any bird or fowl to lay is in the spring and summer when all kinds of plant and animal life are springing forth. It will take years also to produce a winter laying strain. The first essential is to select pullets that produce eggs in November, December and January. Leg band or mark them in some way and hold them over for two years for breeding hens. Sometime before you are ready to mate these hens buy cockerels from some reliable poultryman who you believe has been breeding for winter eggs and start in developing a winter egg producing strain of your own. You will have to follow up consistently each year this selection of the pullets that lay during the winter months, holding them over each year for breeding.

When you have been breeding for several years you will have several breeding lines started and will be able to select males from the heaviest winter egg producers to increase each year the productive qualities and winter egg producing qualities of your flock. One hundred dozen eggs produced during the winter months are worth about the same amount of money as two hundred and fifty dozen produced during March, April and May so that you can readily see the advantage of producing and buying winter egg producing stock. If your birds will show a profit in winter eggs you will have no difficulty showing a profit on your book at the end of the year.



## Older Leghorn Hens Are the Most Profitable

By MARGARET STEWART, Nevada, Mo.

**W**ERE talking "chickens" the other day with some visitors and one of the party asked us how long it paid to keep a hen. Of course, the answer is "as long as she is profitable." That question always reminds us of the anecdote credited to Lincoln, who explained that a tall man's legs should be just long enough to reach the ground. Well, that is just the way we feel about keeping a hen. Just as long as the legs of her production are able to reach the market ground profitably—we say keep her.

We hear that question very often and there seems to be a wide-spread belief that a hen past her first laying year is valuable only as a breeder. We contend that if a hen cannot pay her way in a commercial egg flock for more than one year, she is not worth being used as a breeder—no matter what her pullet record was. There is something wrong if she has not the vitality and vigor to continue her production—she is not worth mating.

We cannot speak from experience with heavier breeds, but for Leghorns we believe this most emphatically. We know it is true with us. The time is coming when we will all consider the second year's production as significant as the pullet year record, if not more so.

There are many factors involved in continuous production, but let us consider just one—the worth of the eggs produced for market—eggs to be used as food.

Statistics and numbers do not make very exciting reading, but just imagine you are considering whether these hens are worth keeping in



your laying pens another year. Just ignore their possible worth as breeders, and see how many you will throw into the selling coop as being too poor to show a profit for commercial eggs.

The first figure refers to the hen's record for egg production in her first laying year. Suppose a pullet starts laying September 3—then her first year refers to the 365 days from September 3 through to the next September 2. Her second laying year will begin with the next September 3 and continue another 365 days—and so on.

### Interesting Four Year Records

Here are a few that laid over 250 eggs their first years. Without considering their worth as breeders, would you find them profitable for commercial eggs after their pullet years?

These hens laid as follows:

Hen "A"—1st year, 268; 2nd year, 260; 3rd year, 243; 4th year, 210; total, 4 years, 981.

Hen "B"—1st year, 257; 2nd year, 232; 3rd year, 210; 4th year, 196; total, 4 years, 895.

Hen "C"—1st year, 256; 2nd year, 242; 3rd year, 221; 4th year, 181; total, 4 years, 910.

Hen "D"—1st year, 257; 2nd year, 242; 3rd year, 220; 4th year, 205; total, 4 years, 924.

Hen "E"—1st year, 259; 2nd year, 247; 3rd year, 239; 4th year, 221; total, 4 years, 966.

Not much of a "drop-off" is there?

We refer to the annual decrease as the "drop-off." We do not know that the term is generally used. Maybe we are quoting someone, or maybe we just manufactured the term as we've been discussing records. It is a shorter phrase than "the annual decrease in egg production" which is what we mean when we use the shorter phrase.

### Rate of "Drop-Off" in Hens that Laid 200 to 250 in Pullet Year

First Year .....	232	237	231
Second Year .....	228	223	215
Third Year .....	201	201	197
Total .....	661	661	643
First Year .....	241	204	
Second Year .....	223	196	
Third Year .....	209	192	
Total .....	673	592	

When these hens had completed the above records please note that they were for practical purposes 6 months older than the period of years representing their record, or in other words nearly four years old.

The same is true with the age of the other hens' ages listed in this account.

### Two-Year Record Hens in 200 to 250 Egg Class, Pullet Year

Here are a few with only two years records completed that show the "drop-off" one may expect from this general group:

First Year .....	229	221	234	210	201
Second Year .....	227	188	227	206	235
Total .....	456	409	461	416	436

You'll notice that the second one mentioned had a much greater "drop-off" than the others. Ordinarily we are not much interested in a hen that

shows such a big decrease as 33 eggs in one year. Because of her blood lines and one or two factors against this bird, we decided she was worth mating. We have had a chance to watch her get. She has thrown some very good birds—some of just ordinary ability and several of poor laying ability (by that we mean below 200 eggs in the pullet year). So there you are.

We are crowded for housing room and so each year to make room for pullets we are compelled to dispose of a good many hens that we are convinced would prove profitable layers. So we cannot offer as many or as conclusive figures in the group below 200. However, we have some records for birds in this group and we have found the figures interesting. Some breeders maintain that a poor layer has a greater proportional "drop-off" than a good layer. These figures represent hens of about the same general breeding as the others, though they have not had quite the same management. We believe these figures are significant and offer them for what they may be worth.

#### The Group Laying Under 200 in Their Pullet Year

First Year .....	198	184	197	179	197
Second Year .....	158	159	182	175	181
Third Year .....	127	155		173	
<hr/>					
First Year .....	180	483	498	379	527
Second Year .....	188	184	188	187	154
		189	175	183	150
					164
	368	373	363	370	304
					326

Those marked with a "\*" indicate an incomplete record for that year. You will notice that occasionally a hen laid more her second year than she did her first. We attribute this to some variation in handling though occasionally we will have an increase of a few eggs when we do not know of any fault in management. By "management" we refer to housing, feeding, when pullets are hatched, when brought to lay, and so on.

We say fault in management because we believe that normally a hen should lay in a diminishing scale. Of course, we breed to make the "drop-off" as little as possible, and we try to handle or manage the hens so they will have a chance for what amounts to practically continuous production, for that is our ideal. We breed for birds of vigor and vitality—birds that look upon laying an egg a day as a duty or chore, as simple and inevitable as eating and drinking.

We know that a hen that lays 150 eggs a year shows a return that averages about \$3, taking our figures year in and year out. This is for market eggs, and the cost of feed and interest on investment and depreciation on housing is deducted from the gross income. The \$3 for the 150-egg hen represents our labor income and profit. We realize that some will have a higher feed bill to pay but, usually, these folks will receive a higher price per dozen for eggs, so that the net labor income and profit would figure about the same.

If a hen has proved profitable for twelve months in the production of market eggs, she will prove valuable for another year of production of market eggs. You notice we say twelve months production. The poor hens will stop before the end of the twelve months and should be removed from the flock. Certainly, to be satisfied with a flock one should be able to keep at least two-thirds of the pullets and the replacement necessary to keep a certain number of layers, would, after two or three years, be held to be considerably less than a third of the number desired.

You will observe we have not mentioned the worth of the mature hens as breeders for the very real saving that occurs when the annual replace-

ment is reduced. It is not that these factors are unimportant but that we are trying to present this from the very simplest angle.

The point is, that if a good hen is given a chance the first year, she will prove profitable a second year, given equally good care again; and that a hen that proves poor, when given a fair chance the first year, has no chance to better her record the second year, if kept over. Remember, a poor hen used as a breeder is worse than no hen. No one in this day and age of well bred poultry can afford to start breeding up a flock of birds from hens that can not pay their way in a commercial egg flock. And that is stating the case mightily conservatively.

Get good birds, give them good care, and then let them prove their worth in continuous egg production. Leghorns properly bred and cared for will do it.

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## 500 Leghorns Lay Eggs Worth \$2,646.04 in One Year

By B. F. KAUPP, Poultry Investigator and Head Poultry Dept.,  
North Carolina State College, Raleigh, N. C.

**Q**UITE often we are told that a flock of birds made a certain amount of money over and above expenses, but the most of the time when we bore in, and see just what they meant by expenses, we find that the birds were not charged with all the expenses such as interest on investment, depreciation of property, deaths, taxes, auto share, labor and many other items. We have just measured a flock of 500 Single Comb White Leghorn pullets (500 at the start) and found as usual that they were "there with the goods." This commercial unit is located at the Mountain Poultry Farm in North Carolina and was conducted by the Poultry Department of the North Carolina State College. The birds were housed in a half monitor house twenty feet wide and eighty feet long. The mash consisted of the following:

### North Carolina Laying Mash

Table salt .....	1 pound
Bone meal .....	4 pounds
Fish meal .....	20 pounds
Pulverized oats .....	20 pounds
Wheat middlings .....	20 pounds
Corn meal .....	35 pounds
Total .....	100 pounds

The mash was kept in hoppers and before the hens at all times. The grain mixture was as follows:

### North Carolina Grain Feed for Laying Mash

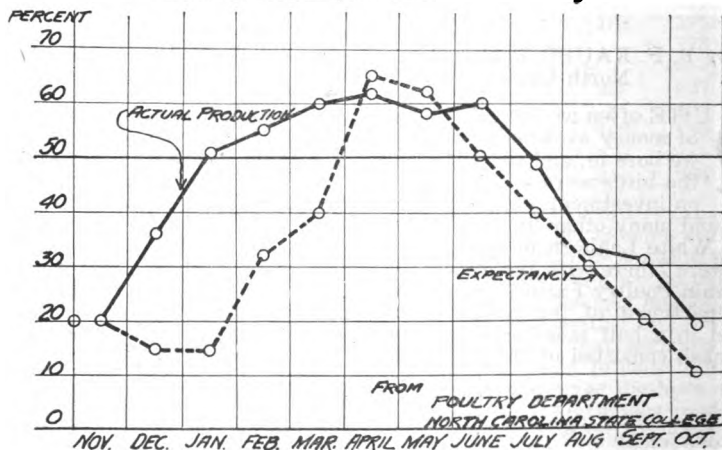
Corn .....	50 pounds
Oats, heavy .....	30 pounds
Wheat .....	20 pounds
Total .....	100 pounds

The green feed consisted of cabbage, mangels and pasturage of rape and oats. Water was constantly kept before the birds. As was also grit and oyster shell. The birds were under evening lights from November 1, 1924, to April 1, 1925, and then gradually discontinued.

### Inventory, Purchases and Sales

At the first of the year there were 500 Single Comb White Leghorn pullets which were valued at \$2.00 each—which represented an investment in birds of \$1,000.00. In making these estimates we value the birds the second year at \$1.50, and the third year at \$1.00 and then, after they finish their third laying year, they will bring enough on the market to make up the balance. There were no purchases or sales during the year; they were handled just as any commercial flock should be handled. The losses from the laying force then consisted of the deaths and any that showed themselves to be of no further value as layers. Such birds if physically fit were sold as food and the flock credited for this amount under the term miscellaneous. There were sold and eaten during the year

### ***TWELVE MONTHS PRODUCTION OF S.C. WHITE LEGHORN PULLETS UNDER LIGHTS NOVEMBER 1 TO OCTOBER 3, 1925***



81, which brought a total sum of \$82.00, leaving after the deaths were deducted, 394 birds valued at \$591.00 making a total of \$673.00. The difference equals depreciation which is \$327.00 equalling the value of \$1,000.00 at the start.

### A Summary of the Feed Consumed

Whether the feed is raised on the farm or whether it is purchased on the market it is worth just the same, provided, of course, that the quality is the same. An average cost of the year for grain mixture was \$2.80 per hundred pounds and there was 20,798 pounds used, representing a total cost for grain feed of \$583.24; while the mash consumed amounted to 13,837 pounds and cost \$2.87 per hundred pounds, making a total for mash of \$397.12; and for succulent feed there was charged \$18.00, the birds having consumed 1,200 pounds in addition to that grazed at certain times of the year from the range. This was charged at the rate of \$30.00 a ton. This made a total of 35,835 pounds of feed which cost \$997.46. In this estimate the green feed was not reduced to a dry basis. To reduce green feed or milk to a dry basis divide by 10. In making estimates where the grain is ground on the farm, one-eighth is added to the price

of the grain to give the right value of the cracked or ground feed. There was used 600 pounds of grit and shell which cost \$1.25 per hundred pounds, making a total cost of \$7.50. There was used one ton of straw for litter and this cost \$20.00.

### The Flock Cost in Labor

The cost in labor is tabulated as follows:

Daily chores in care of the flock .....	365 human hours
Mixing feed .....	20 human hours
Preparing eggs for market .....	20 human hours
Hauling eggs to market .....	104 human hours
Cleaning houses .....	25 human hours
Hauling litter .....	34 human hours
Hauling litter .....	2 human hours
Spraying houses .....	4 human hours
Making and repairing fences .....	4 human hours
Buying, selling, collecting and accounting .....	50 human hours

Total ..... 628 human hours

The value placed on human hours is 25 cents an hour, making a total of \$157.00.

### Upkeep, Taxes, Insurance and Depreciation

The value of the buildings including a proportionate share of buildings used for storage of feed, litter, supplies and equipment was \$2,000.00. The taxes on this building was estimated as \$16.00, the insurance as \$16, depreciation on building \$20.00 and interest on investment at 6% was \$120.00. The value of the land used by this flock was valued at \$100.00 and an interest of \$7.00 was charged for this; \$1.00 was charged as poultry part of the upkeep of the water supply. The taxes, insurance, and depreciation on feed hoppers, coops and other equipment was charged at \$2.00 and \$35.00 was charged for the poultry part of the upkeep of the truck and auto. The interest on the investment for feed and supplies was charged at the rate of six per cent on \$2,000.00 or \$18.00.

There was purchased in the form of miscellaneous supplies 30 egg cases, 500 leg bands, 2 gallons dip, 15 gallons kerosene, medicines, poultry association dues, two poultry papers, at a cost of \$48.00.

### The Egg Production by Months Was as Follows

	Eggs dozens	Price per doz.	Total Value
November, 1924 .....	249 1-12	56.6	\$140.98
December .....	477 5-12	63	300.76
January, 1925 .....	642 5-12	58.9	378.38
February .....	625 2-12	45	281.34
March .....	738 7-12	25	184.64
April .....	710 6-12	35	248.67
May .....	678 4-12	32.5	220.47
June .....	678 7-12	35	237.50
July .....	562 5-12	40	224.97
August .....	355 3-12	45	159.84
September .....	313 5-12	50	156.71
October .....	197 6-12	56.6	111.78
Totals .....	6228 8-12		\$2646.04

In way of incidental returns the flock is credited with four tons at \$15.00 a ton making a value of \$60.00. One hundred birds will void approximately one ton of droppings on the dropping boards in twelve

months, according to experiments carried on in this department some years ago. This we have been selling at the plant at \$15.00 a ton, though for trucking purposes it is worth much more.

The following table includes a summary cost and returns as discussed:

### Summary of Costs and Returns

Cost:—

Items of Cost	Total Value	Per Bird
Depreciation .....	\$ 327.00	\$0.72
Total feed .....	997.46	2.19
Grit and Shell .....	7.50	0.016
Litter .....	20.00	0.044
Labor, human .....	157.00	0.345
Buildings .....	172.00	0.378
Land .....	7.00	0.015
Water .....	1.00	0.002
Equipment .....	37.00	0.081
Interest on Stock .....	60.00	0.131
Interest on Feed .....	18.00	0.039
Miscellaneous .....	48.00	0.105
<b>Totals .....</b>	<b>\$1851.96</b>	<b>\$4.056</b>

Returns:—

For eggs produced .....	\$2646.04
Manure sold .....	60.00
Miscellaneous .....	82.00
<b>Total .....</b>	<b>\$2788.04</b>
<b>Total cost .....</b>	<b>\$1851.96</b>
<b>Profit above all costs .....</b>	<b>936.08</b>
<b>Cost per dozen eggs .....</b>	<b>0.274</b>
<b>Cost per bird .....</b>	<b>3.74</b>
<b>Return per bird .....</b>	<b>6.13</b>
<b>Profit per bird .....</b>	<b>2.39</b>

The number of birds for the year was estimated on the basis of hen days which is the only accurate way.

In the graph on page 84 is shown the per cent production and the expectancy production. It will be seen that the lights caused the increased production of high priced eggs.

## S. C. White Leghorns Are Way Ahead

As Winners in the Poultry Shows, As Winners in the Official Contests, As the Basis of the Egg Farm, the Baby Chick Industry, the Commercial Farm and the Breeding Plant.

All reliable S. C. White Leghorn breeders owe it to themselves, the variety and the Club to join in the work of the only organization in the world that works daily for the promotion of the S. C. White Leghorn.



\$2.00 pays all fees and gives full Club benefits, including Official Journal, Club Literature and Club Specials in Ribbons and Cups at Poultry Shows and Official Contests. Write today for membership.

**National Single Comb White Leghorn Club**

**ALMA LEONA BROWN, Sec'y**  
**BURLINGTON, WISCONSIN**

1876—Fifty Years a Breeder of—1926  
**SINGLE COMB BROWN LEGHORNS**

and

Forty Years a Winner Is  
 The Past History of—

# Grove Hill Poultry Yards

The cumulative  
 experience  
 of these years  
 has gone into  
 the matings of

**Grove  
 Hill  
 Browns**

Send for Sched-  
 ule of Matings  
 and Winning  
 Sheet.



For more than  
 a generation the  
 name—

**Grove Hill**

has been associ-  
 ated with the  
 best in—

**Browns**

Hence the name  
 has been accept-  
 ed everywhere as  
 a symbol of the  
 highest quality.

## 1926 Show Record Madison Square Garden

### DARK BROWNS

1-2-3 Cock; 1-2 Hen; 1-2-3-4 Cockerel;  
 3 Pullet; 1 Old Pen; Best Display.  
 18 Places On 19 Entries.

### LIGHT BROWNS

1 Cock; 2-3 Hen; 1 Cockerel; 1-2 Pullet;  
 1 Old Pen; Best Display.  
 8 Out of 10 FIRST PRIZES.

EGGS and BIRDS FOR SALE from the strain which cannot be  
 equalled in AMERICA for the richness of continuous first prize  
 winning blood.

**William Ellery Bright, Owner**

**Box 1009**

**Waltham, Mass.**

I have sold my entire flock of Light Browns to Ray J. Belsley, Home State and Savings  
 Bank, Peoria, Illinois, who has bred my strain for 25 years. He is a good breeder,  
 and one to whom I can refer my old customers with assurance they will receive every  
 courtesy and fair treatment.

# Kerlin-Quality Leghorns

## MASTER BREEDERS

Since 1900 have developed a strain of S. C. White Leghorns unsurpassed anywhere for beauty and high egg production. Today "Kerlin Quality" Leghorns are acknowledged the leaders in egg production in every state in the Union and in many foreign countries. Hundreds of our customers have again bought chicks and breeding stock this year in increasing quantities. They know that "Kerlin-Quality" pays. Many customers report flock averages well above 200 eggs per bird. And the highest point of production is in the cold winter months from November to March when egg prices are highest. That is why "Kerlin-Quality" Leghorns pay biggest profits!

## Strong, Active, Hardy Stock

Why experiment? Don't take a chance! You can get this year, right now, at low cost, White Leghorns that it has taken expert breeders twenty-six years to produce. "Kerlin-Quality" Chicks will develop into big, strong, healthy, active layers—big lopped comb, clear-eyed, wedged-shaped, money-making egg machines. In only five

months or less from the time your "Kerlin-Quality" chicks are delivered, you can begin to make a profit. You can get large, white eggs all winter when prices are highest. Get top prices for premium white eggs. You can make more money with "Kerlin-Quality" Leghorns than you ever made before.



Free  
Feed  
With  
Chick  
Order.

**Kerlin-Quality**  
**S.C. White Leghorn**  
**CHICKS**

## Kerlin's Grandview Poultry Farm



# Pay Biggest Profits

## Consistent Layers and Winners

Note the remarkable record of Kerlin's White Leghorns in the following leading official egg contests—completed fall of 1925—in competition with the best Leghorns in the country:

1st Pen—Southern California Contest: Individuals laid 254, 277, 232, 292, 281, 235, 274, 187, 243, 295. Total 2571—Average 257.1. This was a 360-day Record.

1st Pen—Storr's Contest: Individuals laid 235, 278, 211, 241, 236, 235, 272, 253, 249, 255, 29 unidentified. Total 2494—Average 249.4. Record of one reserve bird used and she is in our breeding pen. This was a 51-week Contest.

1st Pen—Ledger-North American Contest: Individuals laid 261, 265, 249, 269, 241 and one egg laid on floor. Total 1285—Average 257.

2nd Pen—Western Washington Contest: Individuals laid 304, 266, 256, 236, 203. Total 1267—Average 253.4.

3rd Pen—Ledger-North American Contest: Individuals laid 257, 203, 248, 258, 262. Total 1228—Average 245.6.

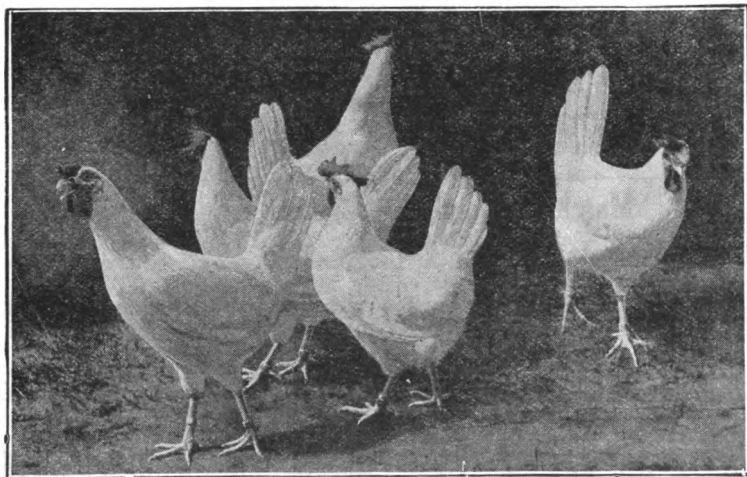
Besides these pens we have 45 additional contest winners, all above the 200-egg mark. Out of 88 birds entered in contests 80 passed the 200-egg mark—27 birds above the 250-egg mark—five above 283 eggs.

These pens are mated to special selected males from six or more generations of 300-egg hens, direct descendants of world record hen of 330 eggs. These males trace three times to Official Record hens with official contest records of 304 to 311 eggs. One hen held world's contest record for two years, and laid eggs weighing 27 oz. per doz.

## BREEDING STOCK

Males, Females, Pens, Trios for Sale at all Seasons. Baby Chicks from Feb. 1 to June 15

Write for large free illustrated catalog. Describes "Kerlin-Quality" Leghorns, and one of the largest and finest breeding establishments in the World.



1st Pen—Ledger-North American Contest: Individuals laid 261, 265, 249, 269, 241. Total 1285, Average 257.

Box 187

Center Hall, Pennsylvania

# Build an Everlay Flock



There is a great amount of joy in having the prize ribbons tacked on your birds at the fairs and shows. This is your proof to the world of the superior merit of your fowls. A flock that does not come up to requirements in feather, color and type is a poor flock indeed.

## But After the Fair, the Show—What Then?

Unless you know right down in your heart that your flock has the true egg-laying habit bred into them, what real satisfaction and profit is there in winning prizes at the shows? Your pleasure is short lived, your satisfaction a night-mare, your profits little or nothing.

## 324 Eggs in Less Than a Year

H. V. Tormohlen, Portland, Ind.

Owensboro, Ky.

Dear Sir:—Just want to write you a few lines, in which perhaps I can get more interest than you. It is somewhat of a fairy tale to most of the people around me.

Last March the fourth, one year and five months ago, I purchased fifty baby chicks of your strain and was fortunate enough to raise 20 nice pullets of same to a laying age, which began to lay on August 15 of last year, or rather one pullet began laying at that time. The others followed soon after.

I sent off and bought eight trapnests for a mere experiment and below I want you to see a record from Hen No. 2. The nine remaining hens laid fine, too, but did not come up to this record, and I myself have raised six different breeds of poultry, but this is by far the best record that I have ever heard of.

Am sure you hear lots of inconsistent stuff in regard to egg records made by other poultry farms, but this record was made by me, and all the members of my home as well as neighbors will indorse same.

Began August 15, 1921—August, 13 eggs; September, 29 eggs; October, 30 eggs; November, 27 eggs; December, 30 eggs; January, 31 eggs; February, 28 eggs; March, 27 eggs; April, 27 eggs; May, 19 eggs; June, 29 eggs; July, 29 eggs; to August 6, present time, 1922, 5 eggs; total of 324 eggs.

She is still laying.

Respectfully,

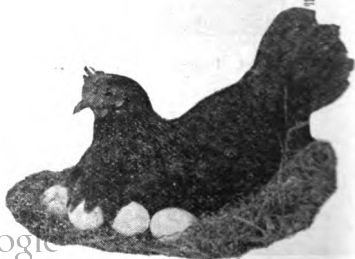
F. L. ROYSTER.

## Matchless Quality—Superior Egg-Laying

There are lots of flocks of fine feathered Leghorns, but there is only one EVERLAY family of Leghorns. In this family, this strain of Leghorns, we have combined the finest show qualities in all the land with the egg-laying habit so persistently bred into them that our customers are ever being surprised beyond their fondest hopes because of their matchless quality and superior egg-laying.

You know, of course, about the many prizes the Everlay Strain has won at the big shows, Chicago, New York, Boston and scores of others. You know about the World's Egg Record at the American Egg-Laying Contest made by my Everlay Brown Leghorns. But what you most desire to know, of course, is, "Just what will these Everlay Leghorns do for me?"

For Mr. Royster of Owensboro, Ky., one of these Everlay Leghorn hens made the wonderful record of 324 eggs in 9 days less than a year. Think of it!



# Be Assured of Success



For Mr. Seevers of Colorado, 12 of his Everlay hens out of 13 go over 200 eggs each for the year. And consider the wonderful show type and quality he speaks of! Is it not worth considering?

We have hundreds of letters from satisfied customers for your inspection. We print hundreds of letters each year from these enthusiastic EVERLAY flock owners. Their names and addresses are given in full, something no other breeder in America has ever dared to do. Our satisfied customers are in every nook and corner of endorsement of the EVERLAY Strain, are genuine expressions of gratitude for what the

the land, their letters of full hearted EVERLAY Strain, are genuine expressions of gratitude for what the

## Average Over 200 Eggs Each This Year

Las Animas, Colo.

Mrs. E. McGough, Denver, Colo.

Dear Madam:—I have your inquiry of the 25th, regarding Mr. Tormohlen and his Leghorns. I have never seen Mr. Tormohlen; I only know him through my dealings with him.

You asked how my chicks of Tormohlen's strain turned out. I ordered about \$50.00 worth of eggs from him last year besides using in one of my breeding pens a cockerel from his Yard 7. From this Yard 7 bird I have twelve real nice daughters. The 12 of his daughters which I kept are going to average over 200 eggs each this year, while the poorest one will beat 150 eggs (trapnest records).

From the \$50.00 worth of Tormohlen's eggs I had hoped to get one light and one dark cockerel. I got one light cockerel which I now value at \$35.00, one dark boy that I would not thinking of selling for \$75.00, two dark cockerels worth about \$10.00 each, one dark pullet for which I refused \$15.00 and another dark pullet easily worth \$10.00.

I am a lover of good birds and am always glad to be of what help I can to others who are likewise interested.

Yours very truly,

J. G. SEEVERS.

## Enjoy With Us Their Merits

I want to help you, too, to build up just such a money-making flock. These Everlay Leghorns are so active, so strong, so vigorous, so beautiful, lay so remarkably that I want you to enjoy with us their merits and money-making possibilities.

My big 24-page catalog will be sent you on request. Read the dozens of letters from other enthusiastic Everlay owners and then do not delay another single day in getting your order in direct to me at Everlay Farm. Never have I had more quality to select from and the prices will surprise you! We have the finest quality for any show; cockerels by the dozen if you like, for your flock, hens or pullets as a fine foundation flock. Eggs and chicks from my finest Special Matings or from my Selected Flocks in any number. Just write me your needs. Do it right now!

**H. V. TORMOHLEN**  
**EVERLAY FARM Box 9A PORTLAND, INDIANA**

# KILLS CHICKEN MITES OR FOWL TICKS (BLUE BUGS) IN POULTRY HOUSES

A single application does the work thoroughly for one whole year, or purchase money is refunded.

**GUARANTEE**—We guarantee that one thorough application of Avenarius Carbolineum, either by brush or sprayer, to the interior walls, dropping boards, roosts, etc., of such buildings, after a previous cleaning, and no matter whether they are of wood, tar paper or plaster, will exterminate mites or ticks in same for a whole year, or purchase money refunded.

## OPINIONS OF POULTRY EXPERTS

H. V. Tormohlen, Ex-Pres. of American Single Comb Brown Leghorn Club and Editor of The Leghorn World, Portland, Ind.:

"I would like to see every poultry man and farmer in the United States paint his roosts with Carbolineum, because I believe it is the best thing found to date against mites."

University of Wisconsin, College of Agriculture and Agriculture Experiment Station, J. G. Halpin, Poultry Husbandry, Madison, Wis.:

"We have been using Carbolineum for the past four years and have had splendid results with it. We use it to paint the roosts and supporting frame, the nests, both outside and inside, and have found it very effective in destroying mites. A special advantage is that one application lasts a long time. In painting the nests one should, of course, be careful that they are thoroughly dried before the hens are allowed access."

Alfred Ter Haar, Route 2, Hudsonville, Mich.:

"I have taken a course at the Michigan Agricultural College in poultry and they said that Carbolineum was the best remedy they know for mites."

## Carbolineum Wood Preserving Co.

Dept. 185

Milwaukee, Wis.

# PATTERSON'S S. C. WHITE LEGHORNS

Trapnested and Pedigreed for heavy egg production. Eighty pullets from two hens with records of 234 and 255 averaged 214 eggs in one year.

**Patterson Leghorn Farm**  
Route 4      SPRINGFIELD, MISSOURI



Tancred Foundation Stock

## AFTER

You Have Tried the Rest

## THEN

Try the Best.

Satisfaction guaranteed in  
whatever you buy.

**EGGS—CHICKS—STOCK**

Send for Free Catalogue of  
How We Do It.

**Gaub's Poultry Farm**

Box 629

Berea, Ohio



Sent on Trial to  
Responsible  
Parties

**F. W. DOBBEL**

Box 278-L, Sonoma, Calif.

## L. P. HARRIS

Breeder of "High Class Winning"

# Single Comh Brown Leghorns

Trapnested and bred in line for 25 years. Elegant style, fine  
head points, marvelous color. Both Light and Dark Brown lines.  
Send for Mating List.

945 S. 32nd Street

LINCOLN, NEBRASKA

## "BARRON" LEGHORNS

### From 200-Egg-Record Stock

We offer several hundred laying pullets at \$2.25 each and yearling hens from same stock  
at \$1.75 each. Our breeding pens headed by cocks from imported birds.  
Baby chicks at \$15.00 per hundred, live delivery guaranteed. Shipped by prepaid parcel  
post. Delivery every Monday, all year around.  
Hatching eggs \$8.00 per hundred, \$1.50 per 15. Special prices on case lots.  
Belgian Hares, Flenish Giant and New Zealand Red Rabbits at reasonable prices. We  
buy back the production from our own stock at fair prices. Illustrated catalog free.

**GLEN ROCK NURSERY AND STOCK FARM**

Ridgewood, New Jersey



**George B. Ferris**

# READ ABOUT MY WINNING LEGHORNS

The winnings of Ferris White Leghorns at the National Egg Contests for the past five years would fill several magazine pages like this, and by trapnesting and pedigree breeding on my 190 acre breeding plant I am constantly improving the already high quality of Ferris stock.

My pens at the 1926 egg contests are improving their standing with each month, and I have more winnings to report than ever before at this time of year.

The first report for the second month to come to hand was from the Yeast Foam Contest at Glen Ellyn, Ill., and carried the announcement that the Ferris pen had won the special prize offered for highest pen in the contest for the month.

At the American Poultry School Contest at Kansas City, the Ferris pen is 3rd highest for the month. At the Southeastern Egg Contest in South Carolina, I have 8th pen to date, according to the last report received. At Quincy, Ill., I have the 5th highest hen for the second month, 500 competing. At Murphysboro, Ill., the Ferris entry is in 5th place to date, 100 pens competing. At the Arkansas Contest I have 4th pen to date, and 5th individual to date. At the Texas Contest 4th highest pen for the 2nd month. At New York I have 6th pen for the 9th week of the contest. At the Public Ledger Contest in Delaware I have 9th pen for the 8th week. In Michigan I have 6th highest pen for the 7th week. At Bergen, New Jersey, 3rd pen for the 10th week. At Vineand, New Jersey, 4th pen for the 8th week and 7th pen for the 9th week. At the Petaluma Contest in California, 3rd highest hen and 6th highest pen for 2nd month. At the Maryland Contest the Ferris pen is

highest in the contest for the 2nd month with a total of 209 eggs and is also highest pen for the first week of the 3rd month. At the Utah Egg Contest, the report just received, shows the Ferris pen 4th highest for the 2nd month.

In most of the fifteen contests above mentioned there are 100 pens competing, making a total of 500 to 1,000 hens in each contest. To spring into leadership in so many contests the first two months shows, better than anything else, the high average quality of Ferris Leghorns, the result of 26 years of breeding for high egg production.

All of the above winners were bred and raised on the Ferris Farm. When you buy pullets, cockerels, hens, eggs or anything I have to sell, you get the same blood lines, with egg producing ability so firmly established, that profitable records are certain. They will make remarkable egg records in your pens as they are doing in egg contests in all parts of the country.

Send for free catalog and bulletin giving complete winnings, prices and full particulars.

## GEORGE B. FERRIS

920 Union

Grand Rapids, Mich.

GEORGE B. FERRIS,

920 Union Ave.

Grand Rapids, Mich.

Mr. Ferris:—

Send me your big free catalog and your monthly bulletin. Quote me your special bargain prices of eggs ☐ , hens ☐ , males ☐.

8-weeks stock ☐ , laying pullets ☐ for ship-

ment about .....

Quantity Wanted .....

Name .....

Address .....



# Here's The Wire For A.S.L.

and

Vaccination is simple and easy. An adult with one child as a helper can vaccinate 150 to 200 fowls an hour.

## Here's The Result



### Vaccination

### With the Original A. S. L. Avian Mixed Bacterin

can do the same for your flock that it did for the 8,000 fowls under Mr. Brown's supervision.

It is the logical, scientific method of preventing and treating the infections accompanying Roup, Colds, Catarrh, Canker, Cholera, Chicken Pox, Diphtheria and the other allied diseases that ruin poultry profits and imperil your poultry investment. It is safe and inexpensive. Vaccination helps in reducing losses and aids in saving a large percentage of infected birds. The ease and simplicity of vaccination and the enormous benefits derived make the cost of treatment very low.

That is why leading poultry men like Mr. Brown, Federal Board Vocational Schools, exhibitors at prominent poultry shows and entrants in the Illinois and Vineland (N. J.) egg-laying contests extensively use A. S. L. Avian Mixed Bacterin.

#### Produced Under Government License

A. S. L. Avian Mixed Bacterin is produced under Government License No. 165 issued by the U. S. Dept. of Agriculture to the American Scientific Laboratories, Inc. Properly stored A. S. L. Bacterin retains its potency two years from date of manufacture.

Healthy fowls weigh—lay—pay.—Keep your birds healthy! Order direct or through your dealer. 60 doses, \$2.00; 250 doses, \$5.00; 500 doses, \$7.50. Syringe and needles \$1.50, postpaid, with full instructions.

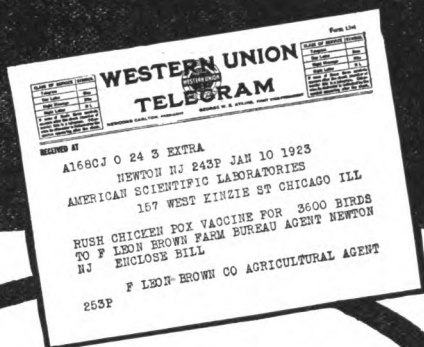
#### American Scientific Laboratories, Inc.

59 West Austin Ave., Dept. 200  
Chicago, Ill., U. S. A.

### 8,000 Hens Inoculated Against Epizootics

NEWTON, N. J.—F. Leon Brown, county farm agent, announced today that he has successfully vaccinated 8,000 hens and roosters here against chickenpox, roup, canker and pneumonia. The operation had no deleterious effect on the egg production of the hens. Brown said he had for some time been experimenting with a new serum because of the high death rate of chickens in the county. The serum is injected in the loose skin beneath the wing.

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**FREE** Customers ordering both syringe and bacterin (any size) will be given FREE a \$1.00 package of Galli-Cura, the real preventive of White Diarrhea and similar bowel diseases. Write for Free Booklet on Vaccination of Poultry.

**Endorsed, Recommended and Used by  
America's Most Successful Poultry Raisers**

# **LICENE**

**KILLS CHICKEN LICE  
AS IF BY MAGIC**

When such breeders as Mrs. Helen Dow Whitaker, E. B. Thompson, Owen Farms, O. F. Mittendorf, Prof. T. E. Quisenberry, U. R. Fishel, and thousands of other big breeders that have had years of experience in raising poultry, endorse and use a preparation as the best, it must have exceptional merit, and will do all that is claimed for it.

## **LICENE Makes Hens More Profitable**

No hen can lay her best when tormented by lice. Kill the lice and watch the increase in your egg production.

Frank D. Rogers, famous as a Breeder of White Leghorns, Elgin, Ill., says:

Whenever I show I take your remedies with me, and they never fail to produce results. I have used your LICENE for the past twelve years with the very best of results and would not be without it.

**Price 60 Cents a Tube, Postpaid**

**SUFFICIENT FOR  
150 TO 200 FOWLS**

LICENE is applied twice a year, but many report that they have found one application a year sufficient. When you stop and consider that one tube is sufficient for 150 to 200 birds, you must realize that LICENE is cheaper than lice powder and liquid lice killers. It is also more conveniently handled and more easily applied, saving time, labor and money, making LICENE not only the best but cheapest lice exterminator the world has ever known. Put up in collapsible tubes, which prevents waste. With our positive guarantee you take absolutely no risk in giving LICENE a trial.

## **Positive Satisfaction Guaranteed or Money Back**

If LICENE does not destroy lice and "nits" (eggs of louse) or does not clean scaly legs on your chickens, or if applied on sitting hens, and does not prevent head lice on chicks—you are the judge—we will refund your money if you notify us (or our agent) within one month after receiving LICENE and no questions will be asked.

**"The Poultry Doctor" is absolutely FREE with every order.**

# **The Licene Co.**

**Room 3, 4254 Drexell Blvd.**

**CHICAGO, ILLINOIS**









